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## INTRODUCTION

India is a land of treasures. The nation is a paradise for its unique art, culture, civilization and indigenous medicine. Even in India, the southern peninsula is believed to be the Cradle of the human race where Tamil culture popularly called Dravidian culture flourished.

Siddha System of medicine is a traditional one, with prestigious background of Tamil culture. It's perhaps the earliest medical science that laid stress on positive health, a harmonious blending of physical, mental, social, moral, and spiritual welfare of an individual.

Birth without any deformity and life without disease is a boon to human kind. It reminds the proverb **“sound mind in a sound body”**. There are two classes of disease, physical and mental. Siddha system guides the way to mukthi through physical and mental well being.

The word siddha is derived from siddhi, which means perfection of great supernatural power. The siddhars were the saints who have controlled the inner aspect of mind.

The siddha system of medicine is one of the ancient system of medicine. The siddha system has been purely associated with spiritual science, philosophy and astrology etc.

Siddha system of medicine is based upon the Panchapoothas [Five elements] and mukkuttram [Thridosha] theory.

According to siddha science, the universe and the body are composed of Panchapoothas namely, Nilam [Earth], Neer [water], Thee[Fire], Vayu [Air], and Agayam [Ether]

“Tholkappiar” explained this as follows;

“நிலம் நீர் தீ வளி விசும்போடைந்தும் கலந்த மயக்கம்  
உலகமாதலின்”

The elements Vayu, Thee and Neer are primarily responsible for the formation of three humors, that is Muthatha. [Vali, Azhal and Iyam.] These are the three fundamental functional constituents of the human body and they have 1:1/2:1/4 in ratio

“மெய்யளவு வாதமொன்று”  
மேல்பித்த மோரையாம்  
ஐயம் காலன்றே அறி”

But, when this equilibrium is upset or deranged these are known as “Mukcuttram” which there after leads to disease.

For proper understanding of these humours in equilibrium, a reasonable knowledge about the physiology of the body is imperative. Siddha physiology involves the ‘96’ basic thathuvas of the body apart from Seven udalkattukkal, Fourteen vegams [reflexal functions], Six suvaigkal [tastes], Three malangal [excretory products], Four udal thees (Fire of the body) and some features.

The great siddhar “ Theraiyar” in his famous venba described the prerequisites of the best physician as follows:-

“நோயறிந்து நோய்முதலி நோக்கறிந்து நோயுதவு  
தாயறிந்து போக்கும் தரமறிந்து - காயநிலை  
நொந்தழியா வண்ண நுகர்விப்பார் நோயினர்க்கு  
தந்தை யெனு நற்பண்டி தர்”

- பாடல் எண்: 636

The meaning of the above poem is that identification of the disease, and the primary causes along with knowing the factors that help the spreading of the disease and the ways of protecting the patient, without undergoing much difficulty are essential to become a great physician.

In Yugi vaidhya Chinthamani, yugi described 42 types of pitha diseases, “kirumi pitham” is one of the entity of the pitha diseases.

In this topic kirumi pitham, the author had made a thorough study which gives a detailed idea about the causes, diagnostic methods and nature of the disease.

## **SIDDHA PHYSIOLOGY**

The science of the functions of living organisms and its components and the physical and chemical factors and processes involved is known as physiology.

The siddha physiology involves the:

Thathuvos	-	96 basic elements
Udal kattukkal	-	7 somatic compounds
Vegams	-	14 reflexial functions
Suvaigal	-	6 tastes
Udarthee	-	4 body fire
Udal vanmai	-	3 immunities

### **I. 96 BASIC FACTORS**

1. Five basic elements	-	Boothams
2. Five sense organs	-	Gnanaentrium
3. Functions of five sense organs	-	Pulankal
4. Five motor organs	-	Kanmaentrium
5. Five motor organs of action	-	Kanmavidayam
6. Four intellectual faculties	-	Anthakaranam
7. One wisdom	-	Arivu
8. Ten nerves	-	Thasa naadigal
9. Three Humours	-	Uyir thathukkal
10. Five Visceral cavities	-	Aasayam
11. Five major system	-	Kosam
12. Six vital centers	-	Aatharam
13. Three principles of moral evil	-	Malam

- |                                |   |            |
|--------------------------------|---|------------|
| 14. Three regions              | - | Mandalam   |
| 15. Three physical bindings    | - | Edanai     |
| 16. Two deeds                  | - | Vinai      |
| 17. Three cosmic qualities     | - | Gunam      |
| 18. Eight predominant passions | - | Raagam     |
| 19. Five status of the soul    | - | Avathaigal |

### **PANCHA POOTHM – FIVE BASIC ELEMENTS**

The fundamental principles of siddha science involve the five basic elements namely.

- |            |   |       |
|------------|---|-------|
| 1. Mann    | - | Earth |
| 2. Neer    | - | Water |
| 3. Thee    | - | Fire  |
| 4. Vayu    | - | Air   |
| 5. Aagayam | - | Ether |

As per the siddha concepts, not only the universe also the human body is formed of the same above mentioned five poothas.



## **Characters of pancha pootham**

### **1.Mann – Earth**

All the organic living bodies and non organic substances are created by earth. Bones, muscles and tissues represent earth in body.

### **2. Neer – Water**

It combines all the things serum, lymph, saliva etc., represent water in the body.

### **3. Thee – Fire**

It gives colour and brightness to the thing. Digestion and circulation represent fire in the body.

### **4. Vayu – Air**

All the spaces are filled by this pootham. Respiration and nervous system represent air in the body.

### **5.Aagayam – Ether**

It lodges the other four poothams.

## **GNANENTHIRIYAM / PORI – FIVE SENSE ORGANS**

- |           |   |                    |
|-----------|---|--------------------|
| 1. Ear    | - | It stands as space |
| 2. Skin   | - | It stands as air   |
| 3. Eye    | - | It stands as fire  |
| 4. Tongue | - | It stands as water |
| 5. Nose   | - | It stands as earth |

## **PULAN - FUNCTIONS OF THE FIVE SENSE ORGANS;**

1. Hearing
2. Touch
3. Vision
4. Taste
5. Smell

## **KANMENTHIRIYAM – FIVER MOTOR ORGANS OF ACTION**

**Table 1**

<b>S.No</b>	<b>Kanmenthiriyam</b>	<b>Responsible functions</b>	<b>Related poothum</b>
1.	Kai- upper limb	All manu cures	Vayu
2.	Kaal – lower limb	Walking	Thee
3.	Vaai – mouth	Speaking	Aagayam
4.	Eruvai –anal orifice	Defecation	Neer
5.	Karuvai – Reproductive orifice	Reproduction	Mann

## **ANTHAKARANAM – 4 INTELLECTUAL FACULTIES**

1. Manam - The mind (or) the thinking faculty
2. puththi - Knowledge, the power of discrimination
3. Siddham - The deciding faculty
4. Agangarm - Achievement faculty

## **ARIVU – 1**

To analysis nalvinai, Theevinai (நல்வினை, தீவினை என பகுத்தறிவது)

## **THASA NAADIKAL – 10 NERVES**

These are subdivided into 10 kinds. These are.

1. Idakalai - From right big toe runs opposite side to the left nostril..
2. Pinkalai - From left big toe runs opposite side to the right nostril.
3. Sulumunai - It is situated between the idakalai and pinkalai.
4. Purudan - It acts on the nerve of the right eye.
5. Kanthari - It acts on the nerve of left eye.
6. Aththi - It controls the nerve of right ear.
7. Alambudai - It controls the nerve of left ear.
8. Sikuvai - It acts on the nerve of tongue
9. Sanguni - It controls the nerve of Reproductive organs
10. Gugu – It controls the nerve of rectum.

## **UYIR THAATHUKKAL – THREE HUMOURS**

The physiological functions of the body are mediated by these three humours, which are made up of the five elements. These three functional factors maintain the integrity of the human body. According to different functions and sits each element is divided as follows.

1. Vali - 10 types
2. Azhal - 5 types
3. Iyam - 5 types

# VALI

## **Location:**

Abanan, faeces. Idakalai, pelvic bone, Spermatic cord, skin, nerves, joints, hairs and muscles.

## **Functions:**

Pain in the whole body, twitching, pricking pain, inflammation, reddish complexion, roughness of skin, hardness of limbs, astringent sense of taste in the mouth, constipation, oliguria, blackish discolouration of skin, stool, urine and muddy conjunctive.

## **Types of Vali:**

Based on functions and locations it is classified into 10 types.

### **1. Uyirkkal – Piraanan:**

Piranan means the forward (or) primary air force. It is mainly responsible for respiration and it is necessary for proper digestion and utilization of the food material.

### **2. Keelnokkukaal – Abaanan:**

It expels faecal matter and urine. It constricts the anal sphincter. It also helps to spread the nutrients of digested food all over the body. Expulsion of sperm and menstrual flow is also under the control of abanan. Its derangement leads to disease of the bladder, rectum and reproductive system.

### **3. Paravukkaal – Viyaanan:**

Viyanan means the diffusive air. It is responsible for the nutrition and movement of all movable and immovable parts of the body. It causes the feeling of sensation. It carries the ingested food extracts to the various parts of the body.

#### **4. Melnökkukaal – Udhaanan:**

Responsible for all kinds of upward motion such as nausea, vomiting and eructation.

#### **5. Nadukkaal – Samaanan:**

Samaanan means the equalizing air. It is considered essential for proper digestion, assimilation and carries digested nutrients to each and every organ. It is derangement will cause gastro intestinal, respiratory and neurological problems.

#### **6. Vanthikaal – Naagan:**

Responsible for higher intellectual functions. Causes opening and closing of eyes.

#### **7. Vizhikkal – Koorman:**

Responsible for vision, lacrimation and yawning.

#### **8. Thummikkaal – Kirugaran:**

It is situated in the tongue, salivary and nasal secretions. Induce appetite, salivation, sneezing, concentration of mind and responsible for taste sense.

#### **9. Kottavikkal – Devathathan:**

It causes laziness, ocular movements and anger.

#### **10. Veengukkaal – Dhananjeyan:**

Resides in the cranial and produces bloating of the body after death.

## **AZHAL**

### **Location:**

Pirana vayu, bladder, moolagni, Heart, umbilical region, abdomen, sweating, saliva, blood, eyes and skin.

### **Characters:**

It governs digestion, heat, visual perception, hunger, thirst, luster, complexion, understanding, intelligence, courage, softness of the body.

### **Types of Azhal**

Azhal is the thermal life force of the body. It is subdivided into five types. They are.

#### **1. Aakkanal - Anala pitham:**

It is responsible to the digestion of food.

#### **2. Vannayeri - Ranjaka Pitham:**

It is responsible for the colour and contents of the blood. It is also responsible for the formation of tissues.

#### **3. Nokku Azhal - Aalosaka Pitham:**

It is responsible for the perception of vision.

#### **4. Aatralangi - Saathaga Pitham:**

It controls the whole body and is responsible for fulfilling a purpose.

#### **5. Olloliththe - Praasaka pitham:**

It dwells in the skin and is concerned with the shine, glow, texture and its complexion.

# IYAM

## **Location:**

Samanan, suzhumunai, vinthu, head, fat, bone marrow, blood, Nose, Colon, Joints, Chest and tongue.

## **Characters:**

In normal conditions it governs stability, lubrication, holding the joints in position, ability to cope with hunger, thirst, worry, heat etc.,

## **Types of Iyam:**

### **1. Ali Iyam - Avalambagam:**

It is situated in the lungs. It controls the heart and other four forms of Iyam.

### **2. Neeppi Iyam - Kiledhagam:**

Present in the stomach. It makes the food wet and helps in digestion.

### **3. Suvaikaan Iyam - Pothogam**

It is situated in the tongue. It helps in perception of taste.

### **4. Niraivu Iyam - Tharpagam :**

It lies in head and is responsible for the cooling ness of the eye.

### **5. Ondri Iyam - Santhigam:**

It is located in the joints and it is responsible for the free movement of the joints.

## **AASAYAM – FIVE VISCERAL CAVITIS**

It is subdivided into five types. They are

### **1. Amarvasayam – stomach:**

It lodges the ingested food.

### **2. Pahirvasayam – liver and small intestine**

Separation and absorption of saaram from the digested food are done by this aasayam

### **3. salavaasayam – bladder**

Responsible for the formation and excretion of urine.

### **4. Malavaasayam – large intestine and rectum**

Responsible for the expulsion of undigested food parts and flatus.

### **5. sukkilavaasayam – Testes (or) ovary**

Place for the formation and growth of the sperm and ovum.

## **KOSAM – FIVE MAJOR SYSTEMS**

### **1. Annamayakosam – digestive system**

Responsible for the digestion, separation of saaram (digestive juice) and sakkai (waste products). It nourishes all the tissues of the body.

### **2. Piranamayakosam – Respiratory system**

Combination of piranan and kanmendhiryam.

### **3. Manomayakosam – Cardio vascular system**

Combination of manam and Gnanendhiryam.



#### **4.Vingnaanamayakosam – Nervous system**

Combination of puthi and Gnanendhiriyam

#### **5.Anandhamaya kosam:**

Combination of piranan and suluthi.

#### **AATHARAM – SIX VITAL CENTRES:**

1. Moolatharam - perineal region
2. Swathittanum - umbilical region
3. manipooragam - epigastric region
4. Anaagatham - cardiac region
5. Visuthi - neck region
6. Aognai - glabellar region

#### **MALAM -3 PRINCIPLE OF MORAL EVIL:**

1. Aanavam - Stage of selfishness
2. kanman - Fruits of deed
3. maayai - Stage of illusion

#### **MANDALAM -3 REGIONS:**

##### **1. Gnayirumandalam**

It is located in the cardiac region and 4 inches above the Stomach.

##### **2. Thingalmandalam:**

It is located in the head.

##### **3. Agnimandalam:**

Situated '2' inches above the moolatharam and spreads up to umbilical regions.

## **EDANAI – THREE PHYSICAL BINDINGS**

Porul patru	-	Material bindings
Puthalvar patru	-	Off spring bindings
Ulaga patru	-	Worldly bindings.

## **VINAI – TWO DEEDS:**

1. Nalvinai	-	Good deed
2. Thevinai	-	Bad deed

## **GUNAM – THREE COSMIC QUALITIES**

### **1. Sathuva gunam**

Godliness in all things

### **2. Raso gunam**

Manifestation of passion, pride, courage, zeal, jealousy, knowledge etc.,

### **3. Thamo gunam**

Badness in all aspect i.e. opposite to sathuva gunam

## **RAAGAM - EIGHT PREDOMINANT PASSIONS:**

1. Kaamam	-	Desire
2. Krotham	-	Hatred
3. Lopam	-	Stingy
4. Moham	-	Lust
5. Matham	-	Pride
6. Maarchariyam	-	Internal conflict
7. Idumbai	-	Mockery
8. Agangaram	-	Ego

## **AVASTHAI - FIVE STATUS OF THE SOUL**

- |                 |   |                  |
|-----------------|---|------------------|
| 1. Nanavu       | - | Wakefulness      |
| 2. Kanavu       | - | Dream            |
| 3. Urakkam      | - | Sleep            |
| 4. Paerurakkam  | - | Stage of stupor  |
| 5. Uyirpadakkam | - | Stage of Samadhi |

## **UDAL KATTUGAL – 7 CONSTITUENT ELEMENTS OF THE BODY**

It maintains the functions of different organs, systems and vital parts of the body. They play very important role in the development and nourishment of the body. They are,

### **1. Saram - Chyle**

It contains nutrients from digested food and nourishes all the tissues, organs and systems. It enriches the blood.

### **2. Chenneer - Blood**

It governs oxygenation in all tissues in vital organs. It is responsible for the nourishment, strength, vigor and colour of the body.

### **3.Oon – Muscle**

It gives look able contour to the body as needed for the physical activity. It performs the movements of the joints and maintains the physical strength of the body.

### **4. Kozuppu - Fat**

Maintains the lubrication of all tissues and give energy to the body.

## **5. Enbu – Bone**

Support and protect the organs and is a fundamental requirement for posture, movement of the body.

## **6. Moolai – Bone marrow, Brain**

Bone marrow nourishes the boney tissues.

Brain is the central nerves system of the body.

## **7. Sukkilam (or) Suronitham – Sperm (or) Ovum**

Responsible for reproduction.

## **14 VEGAMS – REFLEXIAL FUNCTIONS:**

Reflexes are essential for the normal functions of human body, they are.

- |               |                      |
|---------------|----------------------|
| 1. Abana Vayu | - Downward force     |
| 2. Thummal    | - Sneezing           |
| 3. Siruneer   | - Micturation        |
| 4. Malam      | - Defaecation        |
| 5. Kottavi    | - Yawning            |
| 6. Pasi       | - Hunger             |
| 7. Neervetkai | - Thirst             |
| 8. Erumal     | - Coughing           |
| 9. Elaippu    | - Exhaustiveness     |
| 10. Thookkam  | - Sleep              |
| 11. Vanthi    | - Vomiting           |
| 12. Kaneer    | - Lacrimation        |
| 13. Sukkilam  | - Genital Secretions |
| 14. Suvasam   | - Breathing          |

## **SUVAIKAL – SIX TASTES**

Suvai is the peculiar sensation caused by the contact of soluble substances with the tongue. Combination of two poothas constitutes a suvai.

1. Sweet	- Mann	+ Neer
2. Sour	- Mann	+ Thee
3. Salt	- Neer	+ Thee
4. Bitter	- Vayu	+ Aagayam
5. Pungent	- Vayu	+ Thee
6. Astringent	- Mann	+ Vayu

## **UDAL AGANI – 4 BODY FIRES**

The Agni –Azhal which is responsible for digestion, mediated through the samanavayu called as Udal Agni. It is classified into 4 types.

1. Samaagni
2. Vishamaagni
3. Deesagni
4. Mandhakini

## **UDAL VANMAI – THREE TYPES OF IMMUNITY**

### **1. Iyarkaivanmai – Innate immunity**

The natural immunity against diseases of the body at birth.

### **2. Seyarkai Vanmai – Acquired immunity**

Improving health by nutritious food activities and medicines.

### **3. Kalavanmai – Sesonal immunity**

Developing the immunity and stamina according to the age of the person, season and environment.

## **SIDDHA PATHOLOGY:**

Pathology is a scientific study of changes in structure and functions of the body in a diseased condition.

### **Basis of siddha pathology:**

According to siddha pathology, the human body is made of panchaboothams. This five basic elements exists in human body as uyir thathukkal. It is of 3 types namely Vali, Azhal and Iyam. These 3 essential humours are formed by the combination of

Idakalai + Abanan – Vali

Pinkalai + Piranam – Azhal

Suzhumunai + samanai – Iyam

This uyirthatthukkal is functioning as

வாதமாய் படைத்து	-Creation
பித்தவன்னியாய் காத்து	-Protection
சேட்பசீதமாய் துடைத்து	-Destruction

Uyirthatthukkal are responsible for udalthathukkal. These basic structures of the body system are interlinked with one another. Any alterations in this basic form results in disease

### **Noi – disease**

### **Synonyms**

Pini, varutham, Thunbam, Accham, Vinai, Urogam, sugavenam, Viyathi, Asowkiyam, thathuthoda Verupudu.

According to siddh aspect Noi (disease) is defined as

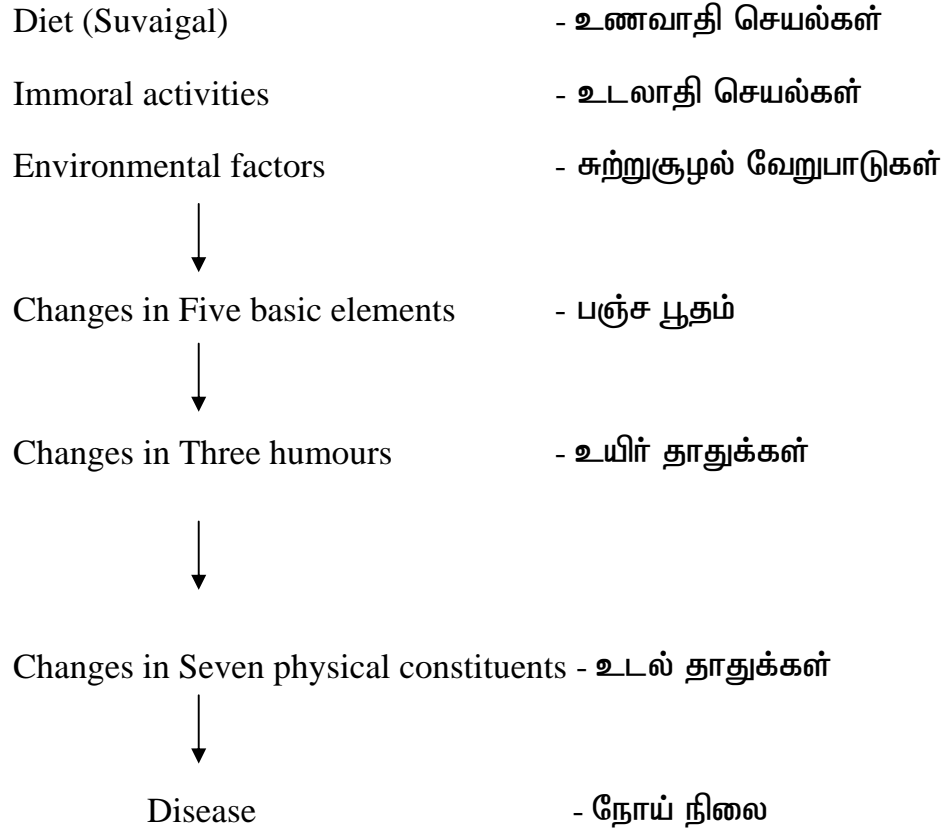
உடலுடன் பிணைந்த உயிர் அணுபவிக்கும் இன்ப உணர்ச்சிக்கு மாறான உணர்ச்சியே பிணி எனப்படுகிறது.

நோய் என்பத ஸ்தூல சூக்கும சரிரங்களாகிய சப்த தாதுக்களும், வளி, தீ - ஐய மாகிய முக்குற்றங்களும் தம் தம் இயற்கைத் தன்மையினின்று வேறுபடும் போது நோய் எனப்படும்.

- நோய் நாடல்

Various factors are responsible for occurrence of disease such as changes in dietic factors, physical activities, and environmental factors.

This is quoted in the following schematic form.



The changes in the any of the above basic structures forms the pathology of the disease

Man is thus linked with external world and any change in the elementary condition of the external world its corresponding changes in the human beings.

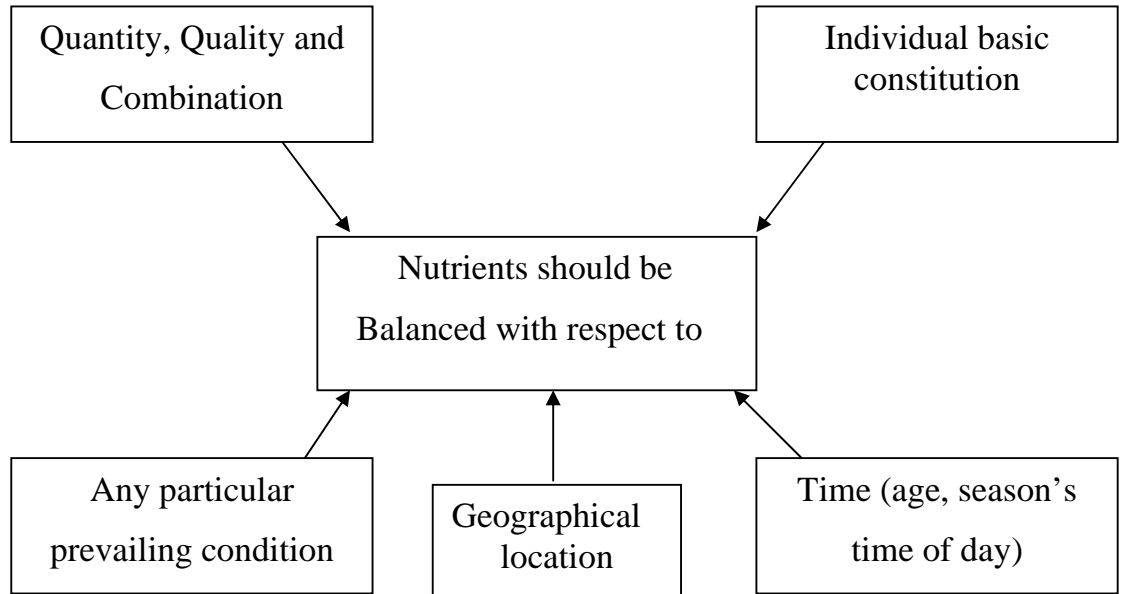
### **I. Variations in the intake of diet:**

Any material that provides the nutritive requirements of an organism to maintain growth and physical well – being is called as food.

Food comprises six suvaikal in appropriate proportion. Suvaikkal are formed by the combination of panchapootham, which are responsible for the uyirathu and seven udalkattukkal.

In ‘THIRUKKURAL’ the following quotations are given regarding food and food habits.

”மாறுபா டில்லாத வுண்டி மறுத்துண்ணி  
ஊறுபா டில்லை வுயிர்க்கு





An alteration in the normal, regular diet will produce changes in the proportion of the suvaikkal resulting in diseases.

Arusuvai – Uyirthathu – Udulthathu – Noi

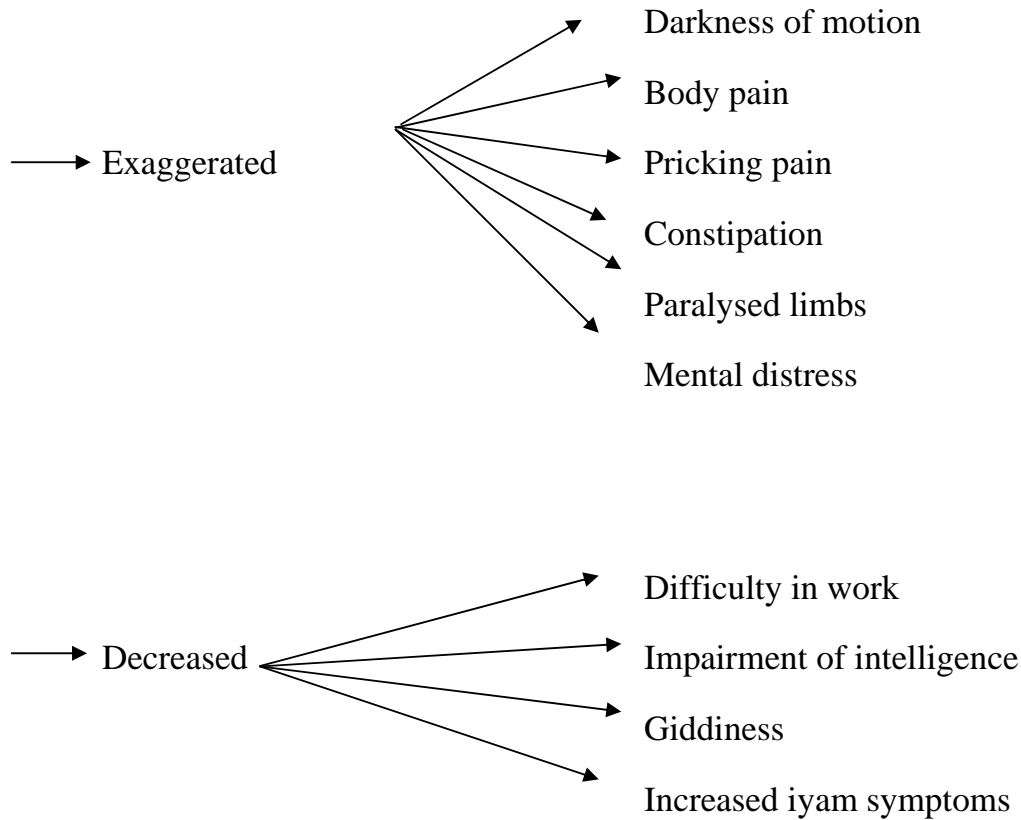
Excessive intake of a particular suvai may produce hyper actives and develops some clinical manifestations. They are given below.

**Table 2:**

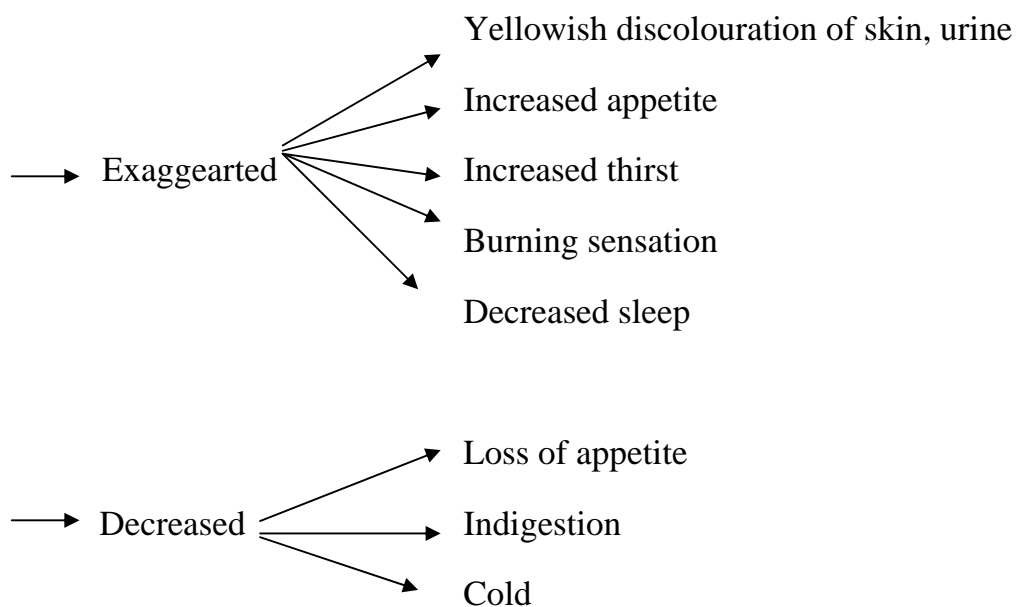
<b>S.No.</b>	<b>Tastes</b>	<b>Diseases due to high intake</b>
1.	Enippu	Produces obesity, excessive fat, increased mucous secretion, indigestion, diabetes, cervical adenitis, increased kabam and its diseases
2.	Pulippu	Produces nervous weakness, dull vision, giddiness, anemia, dropsy, dryness of tongue, acne, blisters etc.
3.	Uppu	Ageing, hair loss, leprosy, dryness of tongue, aged look, debility
4.	Kaippu	Increased dryness of tongue, defected Spermatogenesis, body weakness, dyspnoea lassitude, tremor, back and hip pain.
5.	Kaarppu	Dryness of tongue, generalized malaise, tremor, back pain, lassitude etc.
6.	Thuvarppu	Abdominal discomfort, chest pain, tiredness, impotency, vascular constriction constipation, dryness of tongue etc.

## De-Arrangement of 3 humour

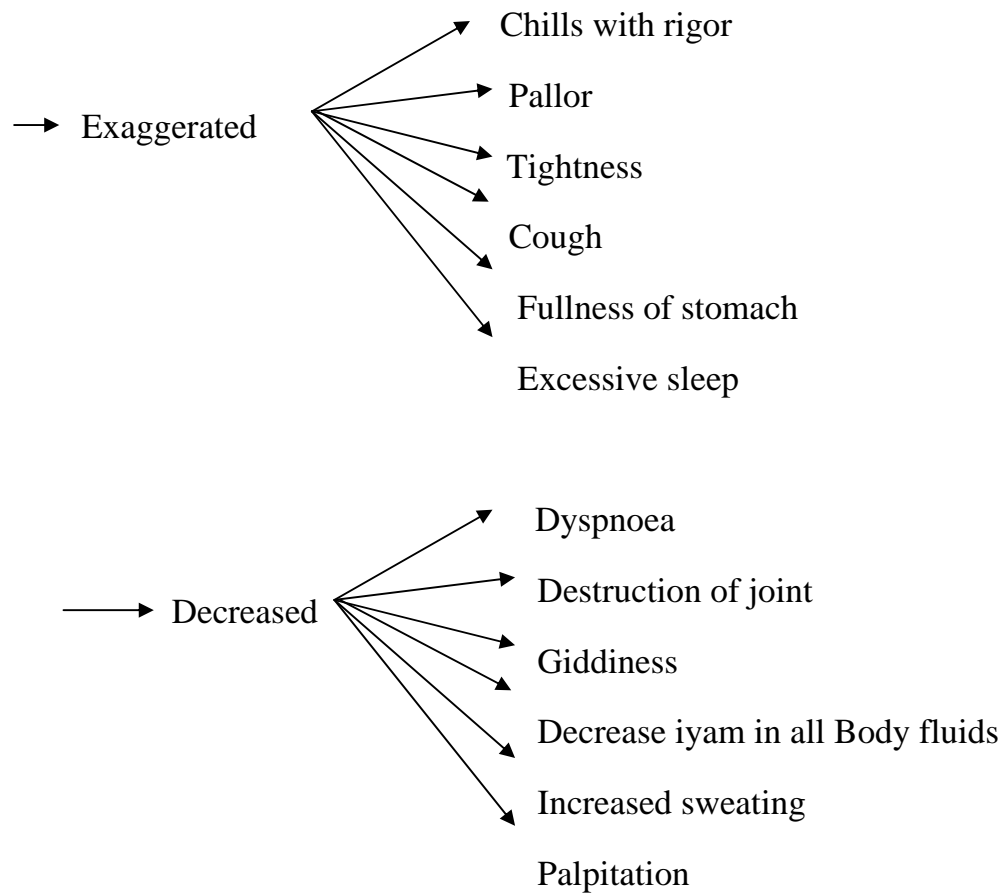
### 1. Vali – Thodam:



### 2. Azhal thodam



### 3. Iyam thodam



### II1. Alterations in udalthathukkal

**Table 3:**

<b>S.No.</b>	<b>Udal thathukkal</b>	<b>Increased features</b>	<b>Decreased features</b>
1.	Saaram	Loss of appetite, excessive salivation, heaviness, decreased physical constituents, dyspnoea, cough, flatulence.	Dryness of skin, tiredness, loss of weight, less ability in hearing.
2.	Senneer	Boils in different parts of the body, splenomegaly, tumours, pricking pain, loss of appetite, haematuria, hypertension, reddish eye and skin, leprosy,jaundice	Affinity to sour and cold, dryness, pallor
3.	Oon	Tubercular adenitis, venereal diseases, extra growth around neck, cheeks, abdomen, thigh, genitalia	Lethargic sense organs, pain in the joints, muscle wasting in chin, gluteal region, penis and thigh

4.	Kozuppu (fat)	Identical features of increased oon, dyspnoea on exertion, extra musculature in gluteal region, external genitalia, chest, abdomen, and thigh	Loin pain, splenomegaly, emaciation
5.	Enbu (Bone)	Excessive ossification and dentition	Joint pain, falling of teeth, falling and splitting of hairs and nails.
6.	Moolai (bone marrow)	Heaviness of body and eye, swollen interphalangeal joints, oliguria, non – healing ulcers.	Osteoporosis, blurred vision.
7.	Sukkilam (or) suronitham	Increased sexual activity, urinary calculi	Dripping of semen, vaginal fluid, pricking pain in the scrotum, inflamed and contused external genitalia

#### IV.Environmental changes:

**Table 4:Seasonal changes of humours**

<b>Humour</b>	<b>↑</b>	<b>↑↑</b>	<b>N</b>
Vali	Mudhuvenil kaalam	Kaarkaalam	Koodhirkalam
Azhal	Kaarkaalam	Koodhirkalam	Munpanikalam
Iyam	Pinpanikalam	Elavenikalam	Mudhuvenil kalam

↑Thannilai valarchi.      ↑↑piranilai valarchi.      N - thannilai adaithal.

#### **b.Regional changes of humours:**

Kurinji      -      kabha diseases  
Mullai      -      pitha diseases  
Neythal      -      vadha diseases  
Marutham      -      no disease will occur  
Paalai      -      mukkuttra disease

#### **V. Effects on self – suppression of 14 vegams**

Reflexes are essential for the normal physiology when there is any self suppression to those reflexes, that will lead to the pathological state.

<b>Vegankal</b>	<b>Diseases</b>
1.Vadham	- Heart diseases, gastritis, umbilical hernia, body pain, liver disorder, constipation, oliguria, loss of appetite.
2.Thummal	- Head ache, defect of special sensory organs and it is activities, pain over the face, hip joint pain.
3. Siruneer	- Anuria, urethral ulcer, gas formation in the abdomen.
4. Malam	- Diarrhoea, flatulence, knee pain.
5. Kottavi	- urinary disorders, leucorrhoea, associated with schizophrenia, abdominal diseases.
6. Pasi	- pricking pain all over the body, emaciation, apathetic face, painful joints
7. Neer	- Same as that of pasi
8. Erumal	- Increased cough, bad breath, heart disease
9. Elaippu	- urinary disorder, syncope, rigor, peptic ulcer.
10. Thookkam	- Heaviness of head, pain in the eyes, deafness
11. Vaanthi	- Rashes, anemia, itching, eye diseases, asthma, fever, cough
12. Kanneer	- Heart diseases, eye diseases, wounds in the scalp, upper respiratory disorders.
13.Sukkilam	- fever, anuria, joint diseases of upper and lower limbs, acute chest pain
14. Swasam	- cough, epigastric pain, venereal diseases

## **DIAGNOSTIC METHODS:**

Diagnosis is the mandatory process in the treatment of a patient. Envagai thervugal which is the unique and special method having a broad and important role in diagnosing a particular diseases. It is based upon the principles of poriyaal arithal, pulanaal arithal and vinaathal.

Poriyaal arithal means understanding by the five organs of perception, nose, tongue, eyes, skin and the ears.

Pulanaal arithal means understanding by the sense objects smell, taste, vision, somatic sense and sound.

Vinaathal means interrogating the patient, learning the history and symptoms of the disease by asking questions to the patient.

### **Envagai thervugal:**

“மெய்க்குறி நிறந்தொனி விழிநா விருமலம் கைக்குறி

-தேரையர் வாக்கு

1. Examination of tongue (நா)
2. Examination of complexion (நிறம்)
3. Examination of voice (மொழி)
4. Examination of eyes (விழி)
5. Examination of faeces (மலம்)
6. Examination of urine (மூம்திரம்)
7. Examination of pulse (நாடி)
8. Examination of touch (ஸ்பரிசம்)



By interrogation feeling, seeing the symptoms and signs are heard and examined. After examining, it must be compared, excluded and at last the final diagnosis is to be arrived.

### **Naa**

It reflects the disease and so it gains importance in examining. The tongue is seen for the colour, shape, size, coating, fissures, growth, surfaces, sensations of taste and also salivary secretion

### **Niram**

The normal colour of each humoral body is explained. If there is any change from normal (ie) colour of eyes, tongue, mucous membrane, any erythema, hypo(or) hyper pigmentation in the skin, they are dealt under this.

### **Thoni**

This not only explains the tone of speech but also the changes in modulations, pitch, sound, fluency, stammering, difficulty in articulation, repetition, listening, answering speech, associated with breathing difficulties etc.

### **Vizhi**

The view on one's eyes stretches all sides. It deals about the vision changes such as loss of vision, blurred vision, changes in visual perception, movements of eye lids & eye balls, colour of conjunctiva and growth lacrimation, dryness, contractions, congenital defects are also specified under this examination.

## **Malam**

The metabolic end product of our food after completing its work of supplying energy is expelled from the body as faeces. And thus any change in the colour, consistency, frequency, amount; components of motion exhibit the disease.

## **Moothiram**

Urine plays an important role in revealing the diseased state in the form of changes in colour, specific gravity, odour, frequency, froth and deposits.

“வந்த நீர்க்கறிஎடை மணம் நுரை எஞ்சலென்  
ரைந்திய லுளவை யறைகுது முறையே”

## **Neikuri**

“அருந்துமாறிரதமும் அவிரோ தமதாய்  
அ.கல் அலர்தல் அகாலவன் தவிர்ந்தழற்  
குற்றளவருந்தி உறங்கி வைகறை  
ஆடிக்கலசத் தாவியே காது பெய்  
தொருமுகூர்த்தக் கலைக்குட்படு நீரின்  
நிறக்குறி நெய்க்குறி நிருமித்தல் கடனே:

This is an unique and special methodology in determining the diseases. The early morning first voided urine is taken in a glass bowl. A drop of gingelly oil is let into its surface. It forms many shapes due to the surface tension exhibited by the urine. If there is any change in the body metabolism, there will be alterations in the components of urine and thus the surface tension depicting various structures.

Vali diseases – Rays of snake (பாம்பை போல் நீண்டல்)

Azhal diseases – As a ring (மோதிரம் போல்)

Iya Disease – Stands as a peral (பரவாமல் முத்துபோல்)

### **Naadi**

It is diagnostic entity and felt in the radial artery with the three fingers, fore finger (Vali), middle finger (Azhal) and ring finger tips (Iyam). Ratio is 1:1/2:1/4. It serves as a good indicator of all ill health. It has been considered for assessing the prognosis and diagnosis.

### **Mei**

It deals all about the changes in the skin (i.e.) tactile sensation, the warmth, the chillness, sweat, numbness, fissures, plaques, papules, ulcers, inflammation etc.

Basically, siddha aims to maintain the equilibrium between the five elements despite out constant interaction with the outer world. The five elements which work as 3 vital forces in body and perform all physical and mental functions are constantly affected by time, space and nutrition.

It is regarding a sound knowledge of noi – naadal is essential to formulate therapeutic measures for various ailments.

## AIM AND OBJECTIVES

The author has selected “ Kirumi pitham” for the dissertation subject because it is one of the disorders, which affect the individuals in higher incidence. Its occurrence is increased in recent times due to abnormal dietary habits and poor sanitation.

So this study mainly aims to define etiology, pathology, symptomology, and diagnostic methods of ‘Kirumi pitham’ by synchronizing the evidence, found in different siddha literature and formulating them after a detailed thorough study into an acceptable and adaptable form.

The following specific objectives have been drawn to achieve the above aim.

1. To collect the ancient siddha literature about pitha disease in general and kirumi pitham in particular
2. To evaluate the siddha basic physiology.
3. To Study the Clinical course of the disease ‘kirumi pitham’ with keen observation on the etiology, clinical Features and diagnosis.
4. The diagnosis of the disease by using siddha parameters like poriyal arithal, pulanal therdhal, vinadhal, Envagai thervugal, udal kattugal and mukkuttra verupadugal.
5. To make a thorough physical examination of the patient.
6. To support the study of kirumi pitham by using modern Parameters also.
7. To discuss the complication’s of kirumi pitham.
8. To have an idea about the incidence of this disease with reference to age, sex, occupational, orientation and Socioeconomic status etc.

## ELUCIDATION ABOUT KIRUMI PITHAM

In Yugi Vaidhya Chinthamani kirumi pitham is mentioned under pitha

roga nithanam as,

கிருமி பித்தம்

“சீதமா யடிவயிற்றிற் நிமிருண் டாகிச்

செழுமையா யுடம்பெங்குந் தினவு மாகி

வாதமா யுடம்பெங்குங் கடுப்புண் டாகி

வற்றியே மலசலமும் வறண்டு போகும்

காதமாய்க் கால் கைகள் கதலித் தண்டு

கனத்தது போல் வெச்சென்று கடுப்பு வாகும்

நாதவாய் மலந்தன்னிற் கிருமி வீழும்

நாறுமே யுடல் கிருமிப் பித்த மாமே”

- யுகி வைத்திய சிந்தாமணி

The meaning of the words in this poem,

புழு (கிருமி)	-	Worm
அடிவயிறு	-	Lower abdomen
திமிர்	-	Colicky Pain
செழுமை	-	Beauty
தினவு	-	Itching
கடுப்பு	-	Pain
வற்றியே	-	Becoming reduced.
மலசலம்	-	Motion, urine
வறண்டு	-	To become dry.
கனத்து	-	Swelling
வெச்சென்று	-	Heat

சீதமாய் யடிவயிற்றிற் திமிருண் டாகிச்

Lower abdominal pain

செழுமையா யுடம்பெங்குந் தினவு மாகி

Itching all over the body

வாதமா யுடம் பெங்குங் கடுப்புண் டாகி

Generalised body pain

வற்றியே மலசலமும் வறண்டு போகும்

Constipation

Reduced urine out

காதமாய்க் கால்கைகள் கதலித்தண்டு

கனத்தது போல் வெச்சென்று கடுப்பு வாகும்.

Pain and swelling of the upper and lower limbs.

நாதவாய் மலந்தன்னிற் கிருமி வீழும்.

நாறுமே யுடல் கிருமி பித்தமாமே

Expulsion of worms in stool, and offensive odour  
of stool.

The Yugi's lines are summarized as follows,

1. Lower abdominal pain
2. Itching all over the body.
3. Generalised body pain.
4. Constipation, and  
Reduced urine output.
5. Pain and swelling of the upper and lower limbs
6. Worms in stool
7. Offensive odour stool.

## **PATHOLOGICAL VIEW OF DISSERTATION TOPIC IN SIDDHA ASPECT**

“பிணியினுற் பத்தியைப் பேசுவான் பிணிமுதல்  
வாதபித் தங்கப் மன்மந்திரி தந்திரி  
வீதமா யுடலரண் மெய்ம்புர வரசு செய்  
முறை செயுமாதலான் .....

- தேரையர் காப்பியம்.

வாதமாய் படைத்து  
பித்த வன்னியாய் காத்து  
சேதம் சீதமாய் துடைத்து

- தேரையர் மருத்துவ பாரதம்

According to siddha aspect, Azhal is said to be the protective agent of all activities of our body. So that author mentioned ‘Azhal’ as ‘Manthiri’ in the above lines.

### **According to Yugi muni**

“போமென்ற பித்தத்துக் கிருப்பிடமே கேளாய்  
பேரான கண்டத்தின் கீழதாகும்”

It means place of the Azhal in body is below the neck.

Azhal is formed by the Bootham Theyu (Fire). The function of Azhal is to govern all the body’s conversion processes as well as its heat and energy producing capacities.

Azhal circulates in the body system in different types and help in the digestion and absorption of food and other general physiological functions of the body. Each types of Azhal have different functions. They are

responsible for maintaining good health. When some of the environmental factors like diet and immoral activities disturb the Azhal, it loses its control which may be diminished or exaggerated. This may leads to Azhal noigal

### **ALTERD THRIDOSHA IN KIRUMI PITHAM**

In this disease the modified Azhal may affect the functions of vali humour.

#### **Azhal**

The deranged Azhal humour results in,

- **Aakkanal (Anarpitham)**

Derangement of anarpitham results in increased appetite in early stage.

- **Vannayeri (Ranjakapitham)**

Derangement of (Ranjakapitham) results in tiredness

- **Aatralangi (Sathagapitham)**

Sathaga pitham is affected in Kirumi Pitham the patients is not active because of generalized body pain.

- **Olloliththe (Pirasagapitham)**

Pirasagam pitham is affected in this disease produces dryness and itching all over the body.

- **Nokkuazhal(Aalosagapitham)**

In later stage kirumi pitham patients may be affected conjunctivitis and photophobia.



## **Vali**

When Azhal humour is increased, Vali humour also get increased.

- **Uyirkkaal(Piraanan)**

In kirumi pitham ,piraanan is affected which produces impaired utilization of nutrients of the body.

- **Keelnokkukaal (Abaanan)**

In kirumi pitham, derangement of abaanan leads to constipation and decreased urine output will occur.

- **Paravakkaal (Viyaanan)**

In “Kirumipitham” Viyaanan is affected produces generalized body pain.

- **Nadukkaal (Samaanan)**

In ‘Kirumi Pitham’ Samaanan is affected digestion and absorption are affected producing indigestion.

- **Vizhikkaal(Koorman)**

Derangement of koorman leads to conjunctivitis and photophobia.

- **Thummikkaal(kirugaran)**

In kirumi pitham, derangement of kirugaran leads to increased appetite in early stage.

- **Kottavikkaal (Devathathan)**

Derangement of Devathathan leads to tiredness

## **Iyam**

In kirumi pitham azhal and vali humour is increased and iyam humour is decreased.

- **Alliyam(Avalambagam)**

In kirumi pitham derangement of avalambagam leads balancing is disturbed.

- **Neeppi iyam(Kilethagam)**

kilethagam is affected which produces increased appetite in early stage.

## **ALTERD UDAL KATTUKAL IN KIRUMI PITHAM**

### **Udal Kattukal**

### **Changes when decreases**

Saaram	Fatigue
Senneer	Itching all over the body
Oon	Weakness of sense organs
Kozuppu	loss of energy
Enbu	Hair falling
Moolai	Reduced urine output

Siddha Pathology deals with the diseased condition of the human, which is due to food alteration, environmental variation and immoral activities.

The underling causes of kirumi pitham may be due to altered food (contaminated food and water) and improper personal hygiene. Modern medicine also stresses the some concept.

## **Detailed pathologic view of dissertation Topic**

### **Modern Aspect**

The small intestine is widest at its duodenal end and narrowest at the ileal end. For this reason foreign bodies may be impacted here.

“சீதமாய் யடிவயிற்றிற் திமிருண் டாகி”

The usual Helminthic infestations are responsible for abdominal pain. The adult ascaris worms live in the upper part of the small intestine. Ascariasis causes prolonged irritation of the muscular coat of loop of intestine may cause muscular spasm. They may stimulate reflex peristalsis. For instance each time peristaltic wave travels along an overly excitable spastic gut, causing recurrent and often severe colicky pain in the abdomen.

“செழுமையா யுடம் பெங்கும் தினவுமாகி”

Pathology of Itching,

The eosinophils normally constitute about two percent of all the body leucocytes .Eosinophils are phagocytes, and they exhibit chemotaxis.

Eosinophils are often produced in large numbers in people with parasitic infection, and they migrate into tissues diseased by parasites. Although most of parasites are too large to be phagocytized cells, nevertheless the eosinophils attach themselves by way of special surface molecules to the parasite and release a substance that kills many of them.

Digestive and reproductive organs of ascaris lumbricoides float inside the body cavity containing an irritating fluid. The irritant action is due to the presence of a substance ascoron (or) ascarase. Allergic manifestation seen in infected individuals, and among laboratory workers dissecting the worms are due to this ascoron.

“வாதமா யுடம்பெங்கும் கடுப்புண்டாகி”

Ascariasis disturbed the small intestinal absorption. Requirement of nutrient to the body is decreased.

Difficiency of nutrients occur. It will cause generalized body discomfort (lassitude).

“வற்றியே மலசலமும் வறண்டு போகும்”

Constipation may be defined as decreased in frequency of bowel movements and difficult (or) painful passage of hard stool.

Prolonged irritation of the muscular coat of loop of intestine may cause muscular spasm due to the spasm the frequencies of bowel movements are reduced leading to constipation.

“காதமாய் கால் கைகள் கதலித்தண்டு

கனத்ததுபோல் வெச்சென்று கடுப்பு வாகும்”

*Ascaris lumbricoides* are robbing the host nutrition. The nutritional effects are seen when the worm burden is heavy. The worms may be present in enormous numbers, sometimes exceeding 500, occupying a large part of intestinal tract. This interferes with proper digestion and absorption of food. Ascariasis may contribute to protein energy malnutrition.

Maintenance of osmotic pressure of plasma is important for the proper distribution of water between blood and tissues.

So, when the amount of plasma protein reduces, the colloid osmotic pressure decreases, because of this permeability of the capillary increases causing increased capillary filtration. So, more amount of water leaks out of the capillary. This fluid accumulates in the tissue spaces resulting edema. The edema starts in the lower extremities and later involves upper limbs.

“நாதவாய் மலந்தன்னிற் கிருமி விழும்  
நாறுமே யுடல் கிருமி பித்தமாமே”

The Ascaris worms are restless wonderers, apparently showing great inquisitiveness, in that they tend to probe insinuate themselves into any aperture they find on the way. The wondering is enhanced when the host is ill.

The worms frequently migrate and enter the stomach and coming out through body openings, such as **anus**, nose, mouth.

## REVIEW OF LITERATURE

Kirumi Pitham also explained in various literatures such as,  
Thanvanthiri vaitheyam and Segarasa sekaram

### கிருமிதோஷக் குறிகள்

“(வலித்திடும்) மலம் விடாதே நாடடோறுந்தங்கி யாங்கே  
கலித்திடுஞ் சிறுபுழுத்தான் காயத்தை மிகக்கெடுக்கும்  
நலித்திடு மபானமட்டும் நசநசென் றரித்துநோவா  
மலத்தினிற் கிருமித்தோஷ மிணுயென வகுக்கலாமே”

- தன்வந்திரி வைத்தியம் - 103

The Clinical Features of KirumiDhosa are abdominal pain, motion does not passes daily and it accumulates in the intestine, accumulation of the worms in the body causes generalized body pain, the worms causes itching and pain around the anus.

### கிருமிபித்தம்

உடம்புகைகால் கடுப்புண்டாம் ஓயாத்தினவுந் திமிருண்டாம்  
விடங்கொள் மலத்திற்கிருமிவிழும் வெச்சென்றுடம்பு வற்றிவரும்  
மடங்கிச்சலமும் மலமதுவும் வரளம்மதிக நாற்றமுமாம்  
திடங்கொள் கிருமிப்பித்தமது செய்யுங்குணத்தைத் தேர்ந்தறியே”

- சேகராச்சேகர வைத்தியம் -39

The clinical features of “Kirumi Pitham” pain present in the body and limbs, persistent itching, expulsion of worms in stool, emaciation, reduced urine output, constipation and foul smell in stool.

## **SMALL INTESTINE**

The small intestine is continuous with the stomach at the pyloric sphincter and leads into the large intestine at the ileocaecal valve. It is a little over 5 metres long and lies in the abdominal cavity surrounded by the large intestine. In the small intestine the chemical digestion of food is completed and most of the absorption of nutrient materials takes place.

The small intestine is described in three parts which are continuous with each other.

The duodenum is about 25 cm long and curves around the head of the pancreas. At its midpoint there is an opening, common to the pancreatic duct and the common bile duct, guarded by the hepatopancreatic sphincter.

### **THE JEJUNUM AND ILEUM**

The mobile part of small intestine extends from the duodeno – jejunal flexure to the ileo –caecal junction, and is arranged in a series of coils which are suspended from the posterior abdominal wall by the mesentery. The coils are contained within the three and half-sided framework of the large gut.

Proximal  $\frac{2}{5}$ <sup>th</sup> of the small gut forms the jejunum

And distal  $\frac{3}{5}$ <sup>th</sup> is known as the ileum.

#### **External features of jejunum:**

It is an empty tube, wider, 4cm thicker and more vascular and usually occupies the umbilical region. On palpation two tubes are felt one for mucous membrane and the other for muscle wall.

#### **LENGTH**

In the living, the length is about 6 metres or 20 feet, out of which jejunum is about 8 feet and ileum is about 12 feet.

## **STRUCTURE OF THE SMALL INTESTINE (MOBILE PART)**

It consists of four coats from without inwards

1. Serous Coat
2. Muscular Coat
3. Sub mucous Coat
4. Mucous Coat

### **SEROUS COAT:**

It is derived from the peritoneum and invests the entire tube except the attachment of the mesentery.

### **MUSCULAR COAT**

It consists of outer longitudinal and inner circular layers of smooth muscles, separated by the myenteric plexus of nerves (Auerbach's plexus).

Contraction and relaxation of these muscle layers occurs in waves which push the contents of the tract onwards. This type of contraction of smooth muscle is called **peristalsis**. Muscle contraction also mixes food with the digestive juices. Onward movement of the contents of the tract is controlled at various points by sphincters consisting of an increased number of circular muscle fibres. They also act as valves preventing backflow in the tract. The control allows time for digestion and absorption of the food.

### **SUBMUCOUS LAYER**

This layer consists of loose connective tissue with some elastic fibres. Within this layer there are plexuses of blood vessels and nerves, lymph vessels and varying amounts of lymphoid tissues. The blood vessels consist of arterioles, venules and capillaries. The nerve plexus is the submucosal or



Meissner's plexus, consisting of sympathetic and parasympathetic nerves which supply the mucous membrane lining.

## **MUCOSA**

This consists of three layers of tissue:

- a. Mucous membrane formed by columnar epithelium is the innermost layer and has three main functions: protection, secretion and absorption.
- b. Muscularis mucosa, a thin outer layer of smooth muscle that provides involutions of the mucosa layer, e.g. gastric glands, villi.
- c. Lamina propria consisting of loose connective tissue which supports the blood vessels that nourish the inner epithelial layer and varying amounts of lymphoid tissue that has a protective function. The lamina supports, protects and provides nutrition to the surface epithelium.

The surface epithelium is lined by simple tall columnar cells, with occasional goblet cells resting on a basement membrane. Each columnar cell is absorptive in function and presents striated brush border on the free surface. The brush borders are produced by numerous microvillus and are covered by a glycoprotein-rich surface coat. This coat presents binding sites for specific substances that are to be absorbed.

### **Features in the mucous membrane of small gut:**

The mucous membrane presents the following features

- a. Circular folds
- b. Villi
- c. Crypts of Lieberkuhn
- d. Solitary follicles
- e. Peyer's patches
- f. Entero – chromaffin cells.

**a. Circular folds** are permanent mucous folds about 800 in number, more large and thickly set in jejunum, and absent in proximal one inch of duodenum and distal six inches of ileum.

**b. Villi** are fleshy tongue like in duodenum, leaf like in jejunum, and finger like in ileum. The villi act as little absorptive organs, present in the entire small gut except over the solitary follicles and Peyer's patches. The villi cover the mucosal surface in a dense mat numbering 10 to 40 per mm<sup>2</sup>, each villus is about 0.5- 1mm long. The absorptive surface of the small gut is enormously increased by circular folds, villi and microvilli. The increased by circular folds is 3-fold, villi 10-fold, and microvilli 20-fold. Thus the total increase is 600-fold, exposing an area of 200 sq. metre.

**c. Crypts of lieberkuhn (or) intestinal glands**

The crypts of liberkuhn (or) intestinal glands are simple tubular glands of intestine. The intestinal glands do not penetrate the muscularis mucosa of the intestinal wall but open into the lumen of intestine between the villi. The intestinal glands are lined by columnar cells. The lining of each gland is continuous with epithelial lining of the villi.

**d. Entero chromaffin cells.**

Interposed between columnar cells of the glands are Argentaffin cells (or) enterochromaffin cells and goblet cells. Argentaffin cells secrete the intrinsic factor, which is essential for the absorption of vitamin B12. The goblet cells secrete mucus. There is another type of cell called paneth cells, which also secrete the enzymes.

**e. Peyer's patches**

These are scanty, present in the lower part of jejunum and mostly circular in outline. The epithelial cells covering solitary follicles or peyer's patches are known as M-Cells which help transport of antigens.

**Functions of small intestine:**

**1. Mechanical function:**

The mixing movements of small intestine help in the thorough mixing of chyme with the digestive juices like succus entericus, pancreatic juice and bile.

**2. Secretary function:**

Small intestine secrete succus entericus, enterokinase and the gastro intestinal hormones.

**3. Hormonal functions:**

The gastro intestinal hormones secreted by small intestine are secretin, enterogastrone and cck – pz [cholecystokinin – pancreozymin]. These hormones regulate the secretary activities of small intestine and pancreas. These hormones also control the movements of gastro intestinal tract.

#### **4. Digestive function:**

Though the digestion of various food substances commence in mouth and stomach it is completed only in small intestine. The digestive functions of small intestine are carried out by the enzymes of succus entericus secreted in small intestine.

#### **5. Activation function:**

The enterokinase secreted by small intestine activates trypsinogen with trypsin. Trypsin, in turn activates other enzymes.

#### **6. Hemopoietic function:**

The intrinsic factor present in the small intestine is necessary for absorption of vitamin B12 from gastro intestinal tract into the blood.

#### **7. Hydrolytic function:**

Succus entericus of small intestine provides water, which helps in all the hydrolytic processes of enzymatic reaction involved in digestion of various food stuffs.

#### **Absorptive functions:**

The presence of villi and microvilli in small intestinal mucosa increases the surface area of the mucosa. This facilitates the absorptive functions of intestine.

The digested products of foodstuffs, proteins, carbohydrates, fats, and other nutritive substances like vitamins, minerals, and water are absorbed mostly in small intestine. From the lumen of intestine, these substances pass through lacteal of villi, cross the muscosa and enter the blood directly (or) through lymphatics.

**Absorption of carbohydrates:**

Glucose is absorbed into blood and drained into portal vein.

Absorption of glucose occurs by sodium co-transport.

**Absorption of proteins:**

The dextro-amino acids are absorbed by simple diffusion and most of levo-amino acids are transported actively by sodium- co –transport system.

**Absorption of fats:**

Most of the fats are absorbed in upper part of small intestine.

Presence of bile is essential for fat absorption.

**Absorption of water and minerals:**

- In small intestine, sodium is absorbed actively.
- Calcium is actively absorbed mostly in upper part of small intestine.
- Water moves in (or) out of the intestinal lumen until the osmotic pressure of intestinal contents become equal to that of plasma.

**Absorption of vitamins:**

Most of vitamins are absorbed in upper part of small intestine

# ASCARIS LUMBRICOIDES

**“Infectious diseases will last as long as huminity excists”**

**Definition:** Infection of A. Lumbricoides in man is known as ascariasis.

**Causative Organism:**

Kindom-Animalia

Phylam-Nnematoda

Class-Secemenda

Family-Ascarididea

Genus-Ascaris

Species-Ascaris lumbricoides

It is the common and longest intestinal nematode commonly known as round worm.

**Geographical Distribution:**

It is cosmopolitan, having a world-wide distribution, being especially prevalent in the tropics, such as China, India and South-East Asia. It occurs in person with unhygienic habits.

**Incidence:**

The incidence of Ascariasis is very high in rural areas with poor sanitation. It is more frequent in children as well as adult males and females. It occurs repeatedly in persons belonging to the same family.

**Habitat:**

The adult worm lives in the lumen of the small intestine (jejunum) of man where it moves freely and maintains its position by its muscle tone.

**Morphology:****Adult worm:**

It resembles an ordinary earthworm and is the largest intestinal nematode parasitising man. When fresh from the intestine, it is light brown or pink in colour but is gradually changes to white. In shape it is rounded and tapers at both ends, the anterior end being thinner than the posterior. The mouth opens at the anterior end and possesses three finely toothed lips, one dorsal and two ventral. The digestive and reproductive organs float inside the body cavity containing an irritating fluid. The irritant action is due to the presence of a substance, ascaron or ascarase which is probably of the nature of primary albumoses (proteose). Allergic manifestations seen in infected individuals and amongst laboratory workers dissecting the worms are due to this ascaron.

**Male :**

It measures about 15 to 25cm in length with a maximum diameter of 3 to 4 mm. The tail-end of the male is curved ventrally in the form of a hook having a conical tip. The genital pore opens into the cloaca from which two curved copulatory spicules protrude. The anus opens with the ejaculatory duct into the cloaca.

**Female :**

It is longer and stouter than the male and measures 25 to 40 cm in length with a maximum diameter of 5mm. The posterior extremity, is neither curved nor pointed but is conical and straight. The anus is sub terminal and opens directly on the ventral aspect in the form of a transverse slit. The vulva opens at the junction of the anterior and the middle thirds of the body on the midventral aspect; this section of the worm is narrower and is called the vulvar waist. The egg-laying capacity of a mature female ascaris has been found to be enormous, liberating about 2, 00,000 eggs daily.

**Eggs:**

The eggs liberated by a fertilized female pass out of the human host with the faeces. **The characteristics of a fertilised** female pass out of the human host with the faeces. Are as follows.

- Round or oval in shapes (60 to 75  $\mu\text{m}$  in length by 40 to 50  $\mu\text{m}$  in breadth.
- Always bile-stained and brownish (golden brown) in colour.
- Surrounded by a thick smooth translucent shell with an outer albuminous coat which is thrown into rugosities or mammillations: this outer coat is sometimes lost (decorticated egg).
- Contains a very large conspicuous unsegmented ovum (the nucleus is concealed by a large amount of coarse yolk granules). There is a clear crescentic area at each pole.
- Floats in saturated solution of common salt.



The female, even if not fertilised, is capable of liberating eggs. The **characteristics of this unfertilised egg** are as follow.

- Narrower, longer (80  $\mu\text{m}$  in length by 55  $\mu\text{m}$  in breadth) and more elliptical.
- Brownish in colour (bile – stained).
- Has a thinner shell with an irregular coating of albumin.
- Contains a small atrophied ovum with a mass of disorganised, highly refractile granules of various sizes.
- Does not float in salt solution (heaviest of all helminthic eggs.)

Fertilised and unfertilised eggs may be found in a sample of stool but if a specimen shows only the unfertilised eggs, it signifies that the host is harbouring the female Ascaris.

### **Resistance of eggs**

Round worm eggs are adversely affected by excessive heat and drying as caused by direct exposure to sun. However, they are remarkably resistant to most other environmental conditions.

Laboratory studies have revealed that the egg can survive and continue maturation even when immersed in 2% formalin, potassium, dichromate and 50% solutions of Acidic, Nitric, Hydrochloric and Sulphuric acids. This factor adds to the longevity of the eggs in the environment.

### **Incubation period**

The incubation period from infection of the swallowed eggs to the first appearance of the eggs in stool is 60-70 days. In larval Ascariasis, pulmonary symptoms occur within 4-16 days and intestinal symptoms occur within 2 months.

**Life – span**

The worm has a life span of 10-12 months; the eggs have to longevity of 3-7 years

**Life Cycle:**

The worm passes its life cycle in one host and no intermediate host is required. Continuance of the species is maintained by transference from one individual to another. Man is the only known definitive host of *A.lumbricoides*. The various stages in the life cycle are described below.

**Stage: 1**

**Eggs in Faeces;** Fertilised eggs containing the unsegmented ovum are passed with the faeces. They are not infective to man when freshly passed.

**Stage:2**

**Development in Soil.** A rhabditiform larva is developed from the unsegmented ovum within the egg shell in 10 to 40 days time, depending on the atmospheric temperature and humidity. This takes place in the soil (that is outside the human host). The ripe egg containing the coiled-up embryo is infective to man before hatching, the larva undergoes moulting.

**Stage :3**

**Infection by ingestion and Liberation of Larva.** When ingested with food, drink or raw vegetables, the embryonated eggs pass down to the duodenum where the digestive juices weaken the egg-shell and stimulate the enclosed larvae into activity. Splitting of egg-shell occurs and rhabditiform larvae measuring 0.25mm in length by 14um in breadth are liberated in the upper part of the small intestine.

#### **Stage: 4**

**Migration through the Lungs.** The larvae liberated in the small intestine do not directly develop into mature worms. The newly hatched larvae burrow their way through the mucous membrane of the small intestine and are carried by the portal circulation to the liver: here they live for a period of 3 to 4 days. Finally they pass out of the liver and via right heart enter the pulmonary circulation. While in the lungs they grow much bigger and increase in length from 0.2 mm to 2mm and moult twice (first- on the fifth or sixth day and the second- after the tenth day). Breaking through the capillary wall they reach the lung alveoli. The time taken for such migration is on an average 10 to 15 days.

#### **Stage: 5**

**Re-entry into the stomach and the small Intestine.** From the lung alveoli the larvae crawl up the respiratory tract, they are propelled into the larynx and pharynx and are once more swallowed. The larvae pass down the esophagus to the stomach and localize in the upper part of the small intestine, their normal abode. Another moulting occurs between the twenty-fifth and the twenty-ninth day of infection.

#### **Stage6:**

**Sexual Maturity and Egg Liberation.** The larvae on reaching their habitat grow into adult worms and become sexually mature in about 6 to 10 weeks time. The gravid females begin to discharge eggs in the stool within about two months from the time of infection. The cycle is again repeated.

**Note:** Four moultings of the larva occur – one outside while within the egg-shell, two in the lungs and one in the intestine.

## **RESERVOIR OF INFECTION**

Man is the only reservoir

## **MODE OF INFECTION.**

Infection is affected by swallowing ripe *Ascaris* eggs (embryonated eggs) with raw vegetables cultivated on a soil fertilised by infected human excreta. Water-supplies may be contaminated and infection may occur by drinking water. Where soil-pollution is common, the eggs may directly be conveyed to the mouth by dirty fingers.

Infection may also occur by inhalation of desiccated eggs in the dust reaching the pharynx and swallowed.

## **Factors favoring the spread of the transmission:**

1. Simple life cycle.
2. Enormous egg production (2,00,000 eggs/ day)
3. These eggs are highly resistant to ordinary disinfectants (due to the ascroside.)
4. The eggs may remain viable for several years.
5. Social customs and living habits.
6. Disposal of faeces is unsuitable.

## **Immunology.**

A partial immunity may be acquired by man, induced by the migrating larvae. Antigens are liberated during the moulting period of the larvae and produce protective antibodies which lower the worm burden and play a part in the immune response. A severe allergic reaction (urticaria and fall of blood pressure) occurs when the larvae reach the small intestine for the second time. Eosinophil count is increased at the time of tissue invasion.

Specific antibodies (complement-fixing and precipitating) can be demonstrated in Ascaris infection. Hypersensitivity to ascaris is determined by skin test.

**Pathogenesis:**

Majority of the infections (about 86%) are symptomless. But the presence of even a few worms can be potentially dangerous. The worm inhibits the upper part of small intestine. The severity of the symptoms depends both on the number of eggs ingestible and on the previous infection history. The adult worm may produce its pathogenic effects in the following ways.

1. Migrating larvae
2. Adult worm
3. Toxins released from the worms

**Symptoms produced by migrating larvae:**

Pathogenic effects of larval migration are due to allergic reactions and not the presence of larvae as such. Therefore the initial exposure to larvae is usually asymptomatic except when the larvae load is very high. But when re infection occurs, subsequently there may be intense cellular reaction to the migrating larvae in the lungs. This may cause symptoms like pneumonia.

**Loeffler's syndrome**

In heavy pulmonary infection typical symptoms such as

Fever,

cough,

dyspnoea,

cyanosis,

urticaria,

pain over the chest,

mucoid and bloody sputum are present.

The sputum may contain Charcot-Leydon crystals. The larvae may occasionally be found in sputum. But are seen more often in gastric washings. The clinical features generally clear in one (or) two weeks. Though it may sometimes be severe, it is rarely fatal. Loeffler's syndrome can also be caused by hypersensitivity to other agents, both living and non living.

**In general circulation**

Larvae pass beyond the pulmonary capillaries and reach the general circulation and they may reach other organs of the body such as liver, spinal cord, and kidneys, very rarely the larvae may occlude a small vessel in the heart and brain.

**Symptoms due to adult worms:**

Clinical manifestations due to adult worms vary from asymptomatic infection to severe and even fatal consequences. It is not unusual to find children apparently unaffected in spite of heavy infestation with the worms.

The pathological effects present are caused by

1. Spoliative action
2. Toxic action
3. Mechanical effects

**Spoliative action:**

*Ascaris lumbricoides* robbing the host of its nutrition. It is otherwise called as nutritional effects, are usually seen when the worm burden is heavy. The worms may be present in enormous numbers, sometimes exceeding 500, occupying a large part of intestinal tract. This interferes with proper digestion and absorption of food. Ascariasis may contribute to protein energy malnutrition and vitamin A deficiency.

Patients have loss of appetite and are often restless abnormalities of jejunal mucosa are often present, including broadening and shortening of villi, elongation of crypts and round cell infiltration of lamina propria.

**Toxic action:**

These are due to the hypersensitivity to the worm antigens and may manifested as

Fever

Urticaria

Wheezing

Conjunctivitis

These are more often seen in persons who come into contact with the worm occupationally, as in laboratory technicians.

**Mechanical effects:**

These are the most important manifestations of *Ascaris lumbricoides*. Mechanical effects can be due to the masses of worm causing luminal occlusion (or) even a single worm infiltrating into a vital area.

The adult worms live in the upper part of the small intestine, where they maintain their position due to their body muscle tone. They may stimulate reflex peristalsis, causing recurrent and often severe colicky pain in the abdomen. The worms may be clumped together into a mass, filling the lumen of intestine leading to intussusceptions. i.e., intestinal obstruction.

The worms are restless wonderers apparently showing great inquisitiveness, in that they tend to probe and insinuate themselves into any aperture they find on the way. The wandering is enhanced when the host is ill, particularly when febrile with the temperature above 39<sup>0</sup> F.

The male worm is more responsive to illness of the host, than the female. The worm may wonder up (or) down along the gut, going up it may enter the opening of the biliary (or) pancreatic duct causing acute biliary obstruction (or) pancreatitis. It may enter the liver parenchyma where it may leads to abscesses. The worm may go up to the esophagus and come out through the mouth (or) nose.

It may crawl into the trachea and the lung causing respiratory obstruction (or) lung abscesses. Migrating downwards the worm may cause obstructive appendicitis. It may cause peritonitis when it perforates the intestine generally at weak spot such as typhoid (or) tuberculous ulcers (or) through suture lines. The tendency makes necessary to preoperative deworming before gastrointestinal surgery in endemic areas.



## **Ectopic ascariasis**

The worms frequently migrate and enter the stomach and may pass up through the esophagus at night and coming out through the body openings such as nose, mouth, anus and vagina etc.. When migration occurs through respiratory system, may produce suffocation and asphyxia.

## **Symptoms due to sensitisation**

The metabolizes of ascaris, both during the period of biological incubation and after the worm mature in small bowels may produce sensitisation phenomenon of allergic manifestation such as.

Skin	-Urticaria
Nose	-Rhinitis
Lungs	- Bronchial Asthma
Intestinal tract	- constipation
Eye	- conjunctivitis and photophobia
Excretory system	- haematuria

## **Diagnosis**

In this condition, diagnosis can be done by two ways (or) methods.

1. Direct evidence
2. Indirect evidence

**Direct evidence:**

This may be possible in the following situations.

1. When worms passed in the faeces particularly after the treatment when the parasite gets paralyzed and get propelled by peristalsis.
2. When the worm is vomited out.
3. On radiological examination this may be particularly obvious when to worms are lying parallel like “Trolley car lines”.

**Demonstration of eggs:**

Each female worm produces and lays massive number of eggs per day. One or two direct wet mounts are usually sufficient to diagnose and infection with even a small number of worms. There are three techniques, to demonstrate the eggs.

These are

1. Concentration technique.
2. Sedimentation technique.
3. Floatation technique.

All type of eggs as described above can be seen in the stool sample. The eggs can also be demonstrated on duodenal aspiration of the bile.

**Sputum Examination:**

In pulmonary involvement of sputum may reveal eosinophils, Charcot-Leyden crystals and occasionally larvae of the parasite.

**In Direct evidence:**

1. Eosinophilia seen on blood examination in initial stages.
2. Dermal allergic reaction positively using powdered *Ascaris* antigen.

**Prevention:**

Ascariasis can be eliminated only if faecal contamination of soil can be prevented. The ascaris egg is highly resistant. Therefore the use of night soil as manure will lead to spread of the infection unless destruction of eggs is ensured by proper composting. Soak the vegetables and other garden crops containing iodine 200 ppm for 15 minutes which kills the eggs and larvae of ascaris and other helminthes.

**Personal protection:****1. Water:**

Drinking water should be boiled up to 100<sup>0</sup> F and filtered to prevent infection through ingestion of infected cyclops. Especially in area with high endemicity of these infections.

**2. Food:**

Under ground (or) fresh vegetables used for making salads should be thoroughly cleaned and preferably peeled before use. Pork, beef and fish should be cooked well to destroy the infective form of the parasite embedded in the flesh.

**3. Skin:**

The children should be encouraged to wear shoes while playing in the field which are likely to be contaminated with infected faeces.

They should not be allowed run bare feet in the open field.

**Health education:****Personal hygiene:**

1. The habit of washing hands after defaecation as well as before and taking food with antiseptic soaps should be encouraged.
2. Nails should be cut and cleaned daily.

**Publicity:**

The information on the mode of infection with the helminthes, methods of prevention and treatment should be widely disseminated.

1. Proper disposal of human stools.
2. Treatment of the affected individuals.
3. Education to children for sanitation and personal hygiene.

## **EVALUATION OF DISSERTATION TOPIC**

### **Materials and methods**

The clinical study on the disease kirumi pitham was carried out at the post graduate department of Noi Naadal in government siddha medical college, palayamkottai.

### **Case selection and supervision**

The author have selected 10 cases of similar symptoms of Kirumi pitham under the supervision and monitoring by faculties and head of the department of post graduate Noi Naadal. All the cases were thoroughly examined and routine investigations performed.

Out of this 7 cases were selected for the study on Noi Naadal aspect of kirumi pitham. The clinical signs and symptoms of Kirumi pitham were taken from yugi Vaithiya Chindamani – 800).

### **1. Evaluation of clinical parameters:**

The detail history and clinical features of the patients were taken carefully.

#### **a. The clinical history contains.**

1. Diet habits
2. Occupation
3. Sanitary status
4. Personal habits
5. Family history

6. Past history
7. Socio economic status
8. History of infectious disease
9. History of previous illness

were collected from the patient.

**b. Clinical features of kirumi pitham are**

1. Lower abdominal pain
2. Itching all over the body
3. Generalised body pain (Discomfort)
4. Constipation
5. Pain and swelling in upper and lower limbs.
6. Worms in stools
7. Stools offensive in nature

were taken as criteria for selection of patients.

**2. Diagnosis:**

The diagnosis is made on the basis of interpretation of the following siddha principles.

1. Envagai Thervugal
  - a. Poriyaal therthal
  - b. Pulanal arithal
  - c. Vinaadtal
2. Mukkutru nilai
3. Udal thathukkal nilai

### **3. Investigation:**

Clinical investigation such as

Routine haematological examination

- a. Total Count
- b. Differential Count
- c. Haemoglobin
- d. Erythrocyte Sedimentation rate.
- e. Blood sugar
- f. Blood Urea

#### **Routine urine analysis**

- a. Albumin
- b. Sugar
- c. Deposits

#### **Examination of stool:**

Stool samples of affected patients by kirumi pitham were tested macroscopically for colour, quantity, nature (solid, semisolid, watery) odour and irugal.

Microscopical examination of stool for the presence of ova and cyst of ascaris lumbricoids were carried out.

### **4. Cases sheet proforma:**

The signs and symptoms of kirumi pitham were properly recorded in separate proforma.

## OBSERVATION AND RESULTS

### 1. Results are observed with respect to the following aspects:

- i. Age and Sex reference.
- ii. Mukkutranilai
- iii. Udal Thathukkal
- iv. Envagai Thervugal
- v. Clinical Features
- vi. Laboratory Findings.

#### i. Age and Sex reference:

**Table: 5**

Age	Sex		Total No. of Cases
	Male	Female	
Up to 10 yrs	-	-	-
10 – 20 yrs	5	1	6
20 – 50 yrs	1	-	1



**ii. Mukkutranilai**

**Table 6: Derangement of Vali**

<b>S. No</b>	<b>Types of Vali</b>	<b>No of cases affected</b>	<b>Changes</b>
1.	Pranaan	-	-
2.	Abanaan	4	Constipation
3	Viyanaan	7	Generalised body pain
4	Uthanaan	-	-
5	Samanaan	7	Reduced appetite
6	Nagaan	-	-
7	Koorman	-	-
8	Kirukaran	6	Reduced appetite
9	Devathathan	7	Tiredness
10	Denanjeyan	-	-

**Table 7:Derangement of Azhal**

<b>S. No</b>	<b>Types of Azhal</b>	<b>No of cases affected</b>	<b>Changes</b>
1	Anar pitham	6	Reduced appetite
2	Ranjagam	3	Tiredness
3	Sadhagam	7	Difficulty to do their work
4	Aalosagam	-	-
5	Prasagam	7	Itching all over the body

**Table 8:Derangement of Iyam**

<b>S. No</b>	<b>Types of Iyam</b>	<b>No of cases affected</b>	<b>Changes</b>
1	Avalampagam	6	Blanching function disturbed
2	Kilethagam	6	Reduced appetite
3	Bothagam	-	-
4	Thorpagam	-	-
5	Santhigam	-	-

**iii. Udal Thathukkal:****Table 9:**

<b>S. No</b>	<b>Udal Thathukkal</b>	<b>No of cases affected</b>	<b>Changes</b>
1	Saaram	7	Fatigue
2	Senneer	7	Itching all over the body
3	Oon	7	Tiredness
4	Kozhuppu	-	-
5	Enbu	-	-
6	Moolai	-	-
7	Sukkilam/Sornitham	-	-

**iv. The Picture of Envagai Thervugal:**

**Table 10:**

Case No	Naa	Niram	Mozhi	Vizhi	Malam	Moothiram Neerkuri	Naadi	Sparisam
1	A	A	NA	NA	A	NA	PV	A
2	A	A	NA	NA	A	NA	PV	A
3	NA	NA	NA	NA	A	NA	PV	A
4	NA	NA	NA	NA	A	NA	PV	A
5	NA	NA	NA	NA	A	NA	VP	A
6	A	NA	NA	NA	A	NA	VP	A
7	A	A	NA	A	A	NA	VP	A

A – Affected

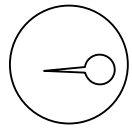

PV – Pitha Vatham

NA – Not Affected

VP – Vatha Pitham

**Moothiram**

**Table 11:**

S.No	Neikuri	No. of Cases	Picture
1	Mellena Paraval	4	
2	Aravil Moothiram	2	
3	Mothirathil Aravam	1	

**v. Clinical Features:**

**Table 12:**

<b>S. No</b>	<b>Clinical Features</b>	<b>No of cases</b>
1	Lower abdominal pain	7
2	Itching all over the body	7
3	Generalized body pain	7
4	Constipation	4
5	Reduced urine output	-
6	Swelling and pain in the upper and lower limbs.	-
7	Expulsion of worms in stool.	-

**vi. Laboratory Findings**

**Table 13**

Cases No	Blood							Bio-Chemical		Urine			Motion	
	TC cells / cumm	DC cells			ESR		Hb%	Sugar msg%	Urea msg%	Alb	Sug	Dep	Ova	Cyst
		P%	L%	E%	1/2 hr mm	1 hr mm								
1	10200	70	22	6	10	16	66	-	-	Nil	Nil	Nil	AOP	-
2	8100	55	40	5	8	16	65	-	-	Nil	Nil	Nil	AOP	-
3	9000	49	38	13	-	-	80	-	-	Nil	Nil	Nil	AOP	-
4	9200	60	30	10	5	10	75	-	-	Nil	Nil	Nil	AOP	-
5	7200	54	36	10	10	20	80	-	-	Nil	Nil	Nil	AOP	-
6	9500	59	30	11	5	10	78	-	-	Nil	Nil	Nil	AOP	-
7	9800	50	40	10	6	12	60	-	-	Nil	Nil	Nil	AOP	-

AOP : Ascaris Ova Present

## STATISTICAL ANALYSIS OF KIRUMI PITHAM

Study subjects were analysed by the statistics mean median and percentages. The inference about the etiology was obtained by use the test of significance 'Z' proportion of single sample.

### Observation and results:

The variations are related to kirumi pitham diseases where observed and assigned, under the rule of heading of the respective variations and phenomena.

### Age

Age is one of the crucial factor of incidences of kirumipitham. Since the disease are occurring among the youngest than the aged. The incidence of the disease was analysed in the basis of age is tabulated as follows.

**Table 14:**

S.No	Age group	No of cases	Significations			
			%	Mean	Median	SD
1.	10 – 14	4	57.2	NS	16.4	13
2.	15 – 19	2	28.5	NS	Years	
3.	35 -39	1	14.3	NS		
4.	Total	7	100			

The above table clearly shows the study subjects characteristics in terms age. The mean age is 16.4+ 8.6 years. The median age 13 years. Fifty percent of the study subjects are below the age of 13 years. The incidence of the kirumi pitham the age group of 10-14 is 57.27 where as the incidence in the other age group namely 15-19 and 35-39 are 28.5% and 14.3% respectively. But the above proportions are not statistically significant.

### **Etiology:**

The main and fore most etiology of the diseases are posted below and the incidences are analysed and interpreted.

**Table 15:**

<b>S.No</b>	<b>Name of etiology</b>	<b>n</b>	<b>No of cases affected</b>	<b>Affected Percentage</b>	<b>Significant</b>
1.	Intake of unboiled water	7	7	100	Significant
2.	Contaminated food	7	3	42.9	Not Significant
3.	Poor sanitation	7	2	28.6	Not Significant
3.	Contact in Soil	7	2	28.6	Not Significant
4.	Bar foot	7	3	42.9	Not Significant
5.	Improper Personal hygiene	7	5	71.4	Significant

The above analysis, the suitable etiology of unboiled water (100%) is statistically significant and that is fore must etiology. Similarly improper personal hygiene is also the second most crucial etiology of Kirumi pitham. The etiology illustrated in the above table namely contaminated food, poor sanitation, contact in soil, and bar foot, come not statistically significant etiologies.

## Mukkuttra Nilaigal

The mukkuttra nilaigal namely vali,azhal and Iyam are tabulated and analysed in terms of percentages of its occurrence in the diseases.

**Table 16:**

S.No	Components	n	Types	Affected cases	
				No	%
1.	Vali	7	Abanaan	4	57%
		7	Viyanaan	7	100%
		7	Samanaan	7	100%
		7	Kirukaran	6	85.7%
		7	Devathathan	7	100%
2.	Azhal	7	Anarpitham	6	85.7
		7	Ranjagam	3	42.9
		7	Sadhagam	7	100
		7	Prasagam	7	100
3.	Iyam	7	Avalampagam	5	85.7
		7	Kilathagam	6	85.7

The types of mukkuttra nilaigal viyanan, samanana, Devathathan, Sadhagam and pragam are observed cent persent. The Kirukaran, Anarpitham, Avalamgergam, and Kilethagam are observed 85.7% of cases. The abanan and Ransagam are observed 57.1% and 42.9% respectively.



**Udal Thathukkal:**

The affected Udal Kattukkal of the Kirumi Pitham disease are enumerated and analysed.

**Table 17:**

S.No	Udal Thathukkal	n	Affected		Changes observed
			No	%	
1.	Saaram	7	7	100	Fatigue
	Senneer	7	7	100	Itching all over body
	Oon	7	7	100	Tiredness

The enumerated Udal Thathukkal are cent present affected.

## Envagai Thervugal

The Siddha diagnostic rule is applied to all the cases and the observation are tabulated and analysed.

**Table 18:**

S.No	Envagai thervugal	n	Affected type	Affected cases	
				No	%
1.	Naa	7	-	4	57.1
	Niram	7	-	3	42.9
	Mozhi	7	-	0	0
	Vizhi	7	-	1	14.3
	Malam	7	-	7	100
	Naadi	7	Pithavatham	5	71.5
			Vathapitham	2	28.6
	Sparism	7	-	7	100%
	Moothiram			7	
	Neerkuri	7	-	0	0
	Neikuri	7	Mellenaparaval	4	57.1
			Aravil mothiram	2	28.6
			Mothirthil	1	14.3
			Aravam		

No cases are observed in mozhi and neekurai.

**Clinical features:**

The Clinical findings of the Kirumi Pitham are tabulated is followers

**Table 19:**

S.No	Clinical findings	n	Cases	
			No	%
1.	Lower abdominal pain	7	7	100
2.	Itching all over the body	7	7	100
3.	Generalised body pain	7	7	100
4.	Constipation	7	4	57.1
5.	Expulsion of worms in stool	-	-	-

The indications of lower abdominal pain, Itching all over the body and generalized body pain are observed all cases (100%). The constipation is observed only in 57.1% of the cases.

### Investigations – Blood

The blood investigations results are posted in terms mean and its std. deviations.

**Table 20:**

<b>S.No</b>	<b>Blood investigation</b>	<b>A</b>	<b>Mean</b>	<b>S.D</b>	<b>95% C.I. of mean for Kirumi Pitham cases</b>
1.	TC cells/ cumm	7	9000	1034	8023 to 9977
2.	DC P%	7	56.7	7.2	49.9 to 63.5
3.	DC L%	7	34.0	6.1	29.4 to 38.6
4.	DC E%	7	9.3	2.8	6.7 to 11.9
5.	ESR- mm/hr	7	12	6.4	5.9 to 18.00
6.	HB%	7	72	8.2	64.3 to 79.7

### Investigations - Motion

**Table 21:**

<b>S.No</b>	<b>Motion test</b>	<b>n</b>	<b>Affected cases</b>	
			<b>No</b>	<b>%</b>
1.	AOP	7	7	100%

AOP- Ascaris Ova Present

Cent percentage of cases having ascaris ova in motion test.

### **Viral Kadai alavu**

The viral kadai alavu of Kirumi Pitham cases are analysed and posted as follows

**Table 22:**

<b>Viral kadai alavu</b>	<b>8 ¼</b>	<b>8 ½</b>	<b>8 ¾</b>	<b>9</b>	<b>10</b>	<b>Total</b>	<b>Mean</b>	<b>Media</b>	<b>S.D</b>
No. of cases	1	3	1	1	1	7	8.78	8 ½	0.59

The median viral Kadai alavu of Kirumi Pitham cases is 8 ½ .The mean virakadu alaru 8.78 + 0.59

## **DISCUSSION**

Kirumi Pitham is one of the gastro intestinal disorders. This disease is well defined in Yugi Vaidhya Chindamani and it resembles with intestinal Ascariasis.

In the following observations, results of the Clinical study for Kirumi Pitham is discussed relevant to the following headings.

### **INTERPRETATION OF OBSERVED CLINICAL PARAMETERS:**

#### **1. Age and sex Reference:**

The incidence of Kirumi Pitham Occurs in people belongs to 10-20 years of age and in common to both sexes, but it is predominant in males, due to their increased change of taking fast foods.

#### **2. Socio-economic status:**

The Occurrence of Kirumi Pitham symptoms are mostly in people under the poor socio-economic status, due to poor sanitation

#### **3. Diet Habits:**

On observation, the disease develops only those who take contaminated water, food.

#### **4. Case Study:**

For all the cases of Kirumi Pitham, the author can't seen the complicated stages of the disease because of the improved knowledge of persons to get medical advice when they are in acute stage of the diseases.

## INTERPRETATION OF SIDDHA PARAMETER

### UYIRTHATHUKKAL NILAIGAL

**Table 23: Vali**

<b>S. No</b>	<b>Deranged humor</b>	<b>Changes</b>
1.	Piranaan	Impaired utilization of nutrients.
2.	Abaanan	Constipation
3.	Viyaanan	Generalized body pain
4.	Samaanan	Reduced appetite
5.	Koorman	Conjunctivitis
6.	Kirukaran	Reduced appetite
7.	Devathathan	Tiredness

**Table 24: Azhal**

<b>S. No</b>	<b>Deranged humor</b>	<b>Changes</b>
1.	Anilam	Reduced appetite.
2.	Ranjagam	Tiredness
3.	Saathagam	Difficulties do their work.
4.	Prasagam	Itching all over its body.
5.	Aalosagam	Conjunctivitis and photophobia

**Table 25: Iyam**

<b>S. No</b>	<b>Deranged humor</b>	<b>Changes</b>
1.	Avlambagam	Balancing function disturbed
2.	Kilethagam	Reduced appetite

**UDAL THATHUKKAL NILAIGAL**

**Table 26:**

<b>S. No</b>	<b>Udal Thathukkal</b>	<b>Changes</b>
1.	Saaram	Fatigue
2.	Senneer	Itching all over the body
3.	Oon	Weakness of sense organs
4.	Kozuppu	Loss of energy
5.	Enbu	Hair falling
6.	Moolai	Reduced urine output



**ENNVAGAI TERVUGAL:****Table 27**

<b>S. No</b>	<b>Envagai thervugal</b>	<b>Changes</b>
1.	Naa	Coated tongue
2.	Niram	Pallor
3.	Vizhi	Paleness of the conjunctiva
4.	Mozhi	Sama oli
5.	Sparisam	Itching all over the body.
6.	Naadi	Pitha Vatham Vatha Pitham
7.	Malam Colour Consistency Quantity	Yellow Constipation Decreased
8.	Moothiram a. Neerkuri Colour Odour Froth Specificgravity Depository	Yellow Nil Nil - Nil
	b. Neikuri	i. Oil slowly spreads in the urine ii. Initially spreads like a serpent and then forms ring shape iii. In some cases initially the oil spreads like ring and then forms serpent shape.

All the changes in Envagai thervugal depicts the derangement of three humors is Kirumi Pitham confirms the diagnosis.

So all the results observed are curable by the administration at drugs and health diets.

### **INTERPRETATION OF ALLIED PARAMETERS**

In some cases of Kirumi Pitham, in routine examination of blood, shows esonophils count increased between 5-10/ cu mm blood.

Stools examination of Kirumi Pitham gives Ascaris ova in present the stools.

Clinical features of Kirumi Pitham and stool examination are very helpful to confirm the diagnosis.

### **MANIKKADAI NOOL:**

The viral Kadai alavu also indicates various symptoms of the disease. In Kirumi Pitham 8½ Viralkadai alvu is noted for majority of cases.

81/2= Itching all over the body

81/4= Generalised body pain

## **HIGHLIGHTS OF DISSERTATION TOPIC**

Kirumi Pitham comes under Pitha rogam nithanam in Yugi Vaithiya Sinthamani 800 which is characterized by lower abdominal pain, Itching all over the body, generalized body pain, constipation, reduced urine out, pain and swelling of upper and lower limbs, worms expels in motion.

In the disease Kirumi Pitham changes in Azhal humour plays a vital role, which is first affect then vali humour is affected.

In various Siddha text books like segarasa sekaram the worm infestation is kept under Azhal disease like Yugi vaithiya sinthamani to prove the fact that the Azhal humour is affected first.

In acute stage of the disease, the provoked Azhal and Vali disturb the digestion and absorption of food producing nutritional deficiency. If acute stage is not treated properly it will leads to Intestinal obstruction and protein, energy malnutrition.

Kirumi Pitham is precisely diagnosed early with the help of sound knowledge of clinical features, and motion containing ova and cyst of ascaris lumbricoides.

## CONCLUSION

The lines that were said by Yugi in Yugi Vaithiya Sinthamani 800 under the heading “Kirumi pitham” well explained and the clinical conditions of Kirumi Pitham is similar to Intestinal ascariasis.

The lines of the version were well analyzed on the Siddha and modern parameters and the patients were thoroughly examined with clinical and biochemical analysis.

Envagi thervugal, Neerkuri and Neikuri helped in the proper diagnosis of the disease.

Routine biochemical examinations were carried out to know the general condition of all patients. Stool examinations were carried out to confirm the diagnosis.

As a Siddha physician we know the importance of our **“Nai illa Neri Principles”** which can only prevent our people from many of these ailments.

Number of cases reporting to O.P and I.P is decreased due to increased health education and maintenance of proper hygiene through preventive aspect to the latest techniques. Reporting cases were also controlled in initial stage without progressing to complicated stage with early diagnosis and proper treatment.

**PROTOCOL**  
**A STUDY TO DIAGNOSE KIRUMI PITHAM**  
**THROUGH SIDDHA DIAGNOSTIC METHODOLOGY**

**By,**

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**BACKGROUND**

**KIRUMIPITHAM**

It denotes the intestinal helminthic worm infestation caused by Ascaris lumbricoids. It is transmitted by unhygienic food handling and poor sanitation.

In Yugi Vaithiya Sinthamani, he classified 42 types of Pitha diseases, “Kirumi Pitham” is one among the pitha classifications

Yugi, explained, “kirumi Pitham” as mentioned below.

“சீதமா யடிவயிற்றிற் றிமிருண் டாகிச்  
செழுமையா யுடம்பெங்குத் தினவு மாகி  
வாதமா யுடம்பெங்குங் கடுப்புண் டாகி  
வற்றியே மலசலமும் வறண்டு போகும்  
காதமாய்க் கால்கைகள் கதலித் தண்டு  
கனத்ததுபோல் வெச்சென்று கடுப்பு வாகும்  
நாதவாய் மலந்தன்னிற் கிருமி விழும்  
நாறுமேயுடல் கிருமிப் பித்த மாமே”.

யூகி வைத்திய சீந்தாமணி

**In kirumipitham,**

Lower abdominal pain  
Itching all over the body  
Generalised body pain  
Constipation and decreased urine output  
Pain and swelling of upper and lower limbs  
Worms in Stools  
Stools, offensive in nature.

## **II. AIM**

### **a) PRIMARY AIM:-**

To Diagnose “Kirumi Pitham” through Envagai thervu and Manikkadai nool.

### **b) SECONDARY AIM :-**

To Correlate “Kirumi Pitham” with Nilam, kaalam and Sothidam.

## **III. POPULATION AND SAMPLE**

Kirumi Pitham (As Explained Above Under The Song). Patients satisfying the inclusion and exclusion criteria mentioned below.

The samples of Kirumi Pitham patients are selected from O.P. of Govt. Siddha Medical College, Palayamkottai, under the guidance of our Faculties and Head of the Department of Post Graduate Noi Naadal Department.

## **IV. SAMPLE SIZE:-**

A sample size of 10 patients will be taken for detailed study.

## **V. INCLUSION CRITERIA:**

1. All age groups.
2. Complaints of atleast 1-2 months duration
3. Willing to give blood, urine and motion specimen for investigations when required.

## **VI. EXCLUSION CRITERIA:-**

1. Enterobius Vermicularis Infection.
2. Ancylostoma Duodenale Infection.
3. Trichuris Trichira Infection.

## **VII. CONDUCT:**

Kirumi Pitham patients satisfying the inclusion and exclusion criteria will be included in this study.

Siddha Diagnostic procedure such as Envagai thervu, Manikkadi nool, Nilam, Kaalam, Sothidam of the patients will be noted.

## **VIII. FORM :**

Form – Diagnostic Proforma for Kirumi Pitham

**P.G. - NOI NAADAL DEPARTMENT**  
**GOVT. SIDDHA MEDICAL COLLEGE, PALAYAMKOTTAI.**

**A Study to Diagnose “Kirumi Pitham” through Siddha**

**Diagnostic Methodology**

**SELECTION PROFORMA**

1.O.P.No \_\_\_\_\_ 2. I.P. NO \_\_\_\_\_ 3. Bed No: \_\_\_\_\_ 4. S. No: \_\_\_\_\_ 5.Date: \_\_\_\_\_

6. Name: \_\_\_\_\_ 7. Age (Years): 

--	--

 8. Sex: 

M	F
---	---

9. Occupation: \_\_\_\_\_ 10. Income \_\_\_\_\_ \month

11. Address:

.....  
.....  
.....

12. Complaints and duration:

.....  
.....  
.....

13. History of present illness:

.....  
.....  
.....

14. Past history:

.....  
.....  
.....

15. Family History:

.....  
.....  
.....

**16.Habits****1.Yes****2.No**

1. Betelnut chewer	:	<input type="checkbox"/>	<input type="checkbox"/>	_____	
2. Tea	:	<input type="checkbox"/>	<input type="checkbox"/>	_____	
3. Coffee	:	<input type="checkbox"/>	<input type="checkbox"/>	_____	
4. Food habits	:	V	NV	<input type="checkbox"/>	_____
a. Intake of uncooked foods		<input type="checkbox"/>	<input type="checkbox"/>	_____	
b. Intake of fast foods		<input type="checkbox"/>	<input type="checkbox"/>	_____	

**17. GENERAL ETIOLOGY FOR KIRUMI PITHAM****1. Yes****2.No**

1. Intake of unboiling water	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Contaminated food	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Poor sanitation	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Contact in soil	<input type="checkbox"/>	<input type="checkbox"/>	_____
5. Bar foot	<input type="checkbox"/>	<input type="checkbox"/>	_____
6. Improper personal hygiene	<input type="checkbox"/>	<input type="checkbox"/>	_____

**18. GENERAL EXAMINATION**

1. Weight (kg)	:	<input type="text"/>	<input type="text"/>	<input type="text"/>
2. Temperature (°F)	:	<input type="text"/>	<input type="text"/>	<input type="text"/>
3. Pulse rate/minute	:	<input type="text"/>	<input type="text"/>	<input type="text"/>
4. Heart rate/minute	:	<input type="text"/>	<input type="text"/>	<input type="text"/>
5. Respiratory rate/minute	:	<input type="text"/>	<input type="text"/>	<input type="text"/>
6. Blood pressure (mmHg)	:	.....		



		1. Yes	2.No	
7. Pallor	:	<input type="checkbox"/>	<input type="checkbox"/>	_____
8. Jaundice	:	<input type="checkbox"/>	<input type="checkbox"/>	_____
9. Cyanosis	:	<input type="checkbox"/>	<input type="checkbox"/>	_____
10. Lymphadenopathy	:	<input type="checkbox"/>	<input type="checkbox"/>	_____
11. Pedal edema	:	<input type="checkbox"/>	<input type="checkbox"/>	_____
12. Clubbing	:	<input type="checkbox"/>	<input type="checkbox"/>	_____
13. Jugular venous pulsation	:	<input type="checkbox"/>	<input type="checkbox"/>	_____

### 19.VITAL ORGANS EXAMINATION

	1. Normal	2.Affected	
1. Heart	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Lungs	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Brain	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Liver	<input type="checkbox"/>	<input type="checkbox"/>	_____
5. Kidney	<input type="checkbox"/>	<input type="checkbox"/>	_____
6. Spleen	<input type="checkbox"/>	<input type="checkbox"/>	_____
7. Stomach	<input type="checkbox"/>	<input type="checkbox"/>	_____

## SIDDHA SYSTEM OF EXAMINATION

### ENNVAGAI THERVUKAL

#### 20. NAA

a . Maa Padinthuruthal

1. Present

☐

2. Absent

☐

b. Niram

1. Karuppu

☐

2. Manjal

☐

3. Velluppu

☐

c. Suvai

1. Pulippu

☐

2. Kaippu

☐

3. Inippu

☐

d. Vedippu

1. Present

☐

2. Absent

☐

e. Vai neer oorai

1. Normal

☐

2. Increased

☐

3. Reduced

☐

#### 21. NIRAM

1. Karuppu

☐

2. Manjal

☐

3. Velluppu

☐

#### 22. MOZHI

1. Sama oli

☐

2. Urattha oli

☐

3. Thazhlntha oli

☐

#### 23. VIZHI

a. Niram

1. Karuppu

☐

2. Manjal

☐

3. Sivappu

☐

4. Velluppu

☐

b. Kanneer

1. Present

☐

2. Absent

☐

c. Erichchal

1. Present

☐

2. Absent

☐

d. Peelai seruthal

1. Present

☐

2. Absent

☐

## 24. MEI KURI

### a. Veppam

1. Mitham ☐ 2. Migu ☐ 3. Thatpam ☐

### b. Viyarvai

1. Normal ☐ 2. Increased ☐ 3. Reduced ☐

### c. Thodu vali

1. Persent ☐ 2. Absent ☐

## 25. MALAM

### a. Niram

1. Karuppu ☐ 2. Manjal ☐  
3. Sivappu ☐ 4. Velluppu ☐

### b. Sikkal

1. Present ☐ 2. Absent ☐

### c. Sirutthal

1. Present ☐ 2. Absent ☐

### d. Kalichchal

1. Present ☐ 2. Absent ☐

### e. Seetham

1. Present ☐ 2. Absent ☐

### f. Vemmai

1. Present ☐ 2. Absent ☐

## 26. MOOTHIRAM

### I. NEER KURI

#### a. Niram

1. Venmai ☐ 2. Manjal ☐ 3. Crystal clear ☐

#### b. Manam

1. Present ☐ 2. Absent ☐

#### c. Nurai

1. Nil ☐ 2. Increased ☐ 3. Reduced ☐

#### d. Edai(Ganam)

1. Normal ☐ 2. Increased ☐ 3. Reduced ☐

#### e. Enjal(Alavu)

1. Normal ☐ 2. Increased ☐ 3. Reduced ☐

### II. NEI KURI

1. Aravam	<input type="checkbox"/>	2. Mothiram	<input type="checkbox"/>
3. Muthu	<input type="checkbox"/>	4. Aravil Mothiram	<input type="checkbox"/>
5. Aravil Muthu	<input type="checkbox"/>	6. Mothirathil Aravam	<input type="checkbox"/>
7. Mothirathil Muthu	<input type="checkbox"/>	8. Muthil Aravam	<input type="checkbox"/>
9. Muthil Mothiram	<input type="checkbox"/>	10. Asathiyam	<input type="checkbox"/>
11. Mellena paraval	<input type="checkbox"/>		

## 27. NAADI(KAI KURI)

### I.Naadi Nithanam

#### a.Kalam

- |                   |                          |                     |                          |
|-------------------|--------------------------|---------------------|--------------------------|
| 1. Kaarkaalam     | <input type="checkbox"/> | 2. Koothirkaalam    | <input type="checkbox"/> |
| 3. Munpanikaalam  | <input type="checkbox"/> | 4. Pinpanikaalam    | <input type="checkbox"/> |
| 5. Ilavenirkaalam | <input type="checkbox"/> | 6. Muthuvenirkaalam | <input type="checkbox"/> |

#### b.Desam

- |          |                          |           |                          |
|----------|--------------------------|-----------|--------------------------|
| 1. Kulir | <input type="checkbox"/> | 2. Veppam | <input type="checkbox"/> |
|----------|--------------------------|-----------|--------------------------|

#### c.Vayathu

- |            |                          |             |                          |              |                          |
|------------|--------------------------|-------------|--------------------------|--------------|--------------------------|
| 1. 1-33yrs | <input type="checkbox"/> | 2. 34-66yrs | <input type="checkbox"/> | 3. 67-100yrs | <input type="checkbox"/> |
|------------|--------------------------|-------------|--------------------------|--------------|--------------------------|

#### d.Udal Vanmai

- |            |                          |           |                          |           |                          |
|------------|--------------------------|-----------|--------------------------|-----------|--------------------------|
| 1. Iyyalbu | <input type="checkbox"/> | 2. Valivu | <input type="checkbox"/> | 3. Melivu | <input type="checkbox"/> |
|------------|--------------------------|-----------|--------------------------|-----------|--------------------------|

#### e.Vanmai

- |           |                          |           |                          |
|-----------|--------------------------|-----------|--------------------------|
| 1. Vanmai | <input type="checkbox"/> | 2. Menmai | <input type="checkbox"/> |
|-----------|--------------------------|-----------|--------------------------|

#### f.Panbu

- |                |                          |              |                          |               |                          |
|----------------|--------------------------|--------------|--------------------------|---------------|--------------------------|
| 1. Thannadai   | <input type="checkbox"/> | 2. Puranadai | <input type="checkbox"/> | 3. Illaitthal | <input type="checkbox"/> |
| 4. Kathithal   | <input type="checkbox"/> | 5. Kuthithal | <input type="checkbox"/> | 6. Thullal    | <input type="checkbox"/> |
| 7. Azhutthal   | <input type="checkbox"/> | 8. Padutthal | <input type="checkbox"/> | 9. Kalatthal  | <input type="checkbox"/> |
| 10. Munnookku  | <input type="checkbox"/> | 11. Pinnokku | <input type="checkbox"/> | 12. Suzhalal  | <input type="checkbox"/> |
| 13. Pakkanokku | <input type="checkbox"/> |              |                          |               |                          |

### II. Naadi nadai

- |               |                          |              |                          |               |                          |
|---------------|--------------------------|--------------|--------------------------|---------------|--------------------------|
| 1 Vali        | <input type="checkbox"/> | 2. Azhal     | <input type="checkbox"/> | 3. Iyam       | <input type="checkbox"/> |
| 4. Vali Azhal | <input type="checkbox"/> | 5. Vali Iyam | <input type="checkbox"/> | 6. Azhal Vali | <input type="checkbox"/> |
| 7 Azhal Iyam  | <input type="checkbox"/> | 8. Iyavali   | <input type="checkbox"/> | 9. Iya Azhal  | <input type="checkbox"/> |

**28.MANIKADAI NOOL ( Viral Kadai Alavu )****29. IYMPORIGAL / IYMPULANGAL**

	1.Normal	2.Affected	
1. Mei	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Vaai	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Kan	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Mookku	<input type="checkbox"/>	<input type="checkbox"/>	_____
5. Sevi	<input type="checkbox"/>	<input type="checkbox"/>	_____

**30. KANMENTHIRIYANGAL / KANMAVIDAYANGAL**

	1.Normal	2.Affected	
1. Kai	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Kaal	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Vaai	<input type="checkbox"/>	<input type="checkbox"/>	_____
4. Eruvaai	<input type="checkbox"/>	<input type="checkbox"/>	_____
5. Karuvaai	<input type="checkbox"/>	<input type="checkbox"/>	_____

**31. YAAKAI**

1Vali	<input type="checkbox"/>	2. Azhal	<input type="checkbox"/>	3.Iyam	<input type="checkbox"/>
4. Vali Azhal	<input type="checkbox"/>	5. Vali Iyam	<input type="checkbox"/>	6. Azhal Vali	<input type="checkbox"/>
7 Azhal Iyam	<input type="checkbox"/>	8. Iyavali	<input type="checkbox"/>	9. Iya Azhal	<input type="checkbox"/>

**32. GUNAM**

1. Sathuva Gunam	<input type="checkbox"/>	2 . Raso Gunam	<input type="checkbox"/>
2. Thamo Gunam	<input type="checkbox"/>		

### 33. UYIR THATHUKKAL

#### I. Vali

	1. Normal	2. Affected
1. Uyirkkaal (Praanan)	<input type="checkbox"/>	<input type="checkbox"/> _____
2. Keelnokkukkaal (Abaanan)	<input type="checkbox"/>	<input type="checkbox"/> _____
3. Nadukkaal (Samaanan)	<input type="checkbox"/>	<input type="checkbox"/> _____
4. Melmokkukkaal (Udhaanan)	<input type="checkbox"/>	<input type="checkbox"/> _____
5. Paravukaal (Viyaanan)	<input type="checkbox"/>	<input type="checkbox"/> _____
6. Vanthikaal (Naahan)	<input type="checkbox"/>	<input type="checkbox"/> _____
7. Vizhikkaal (Koorman)	<input type="checkbox"/>	<input type="checkbox"/> _____
8. Thummikkaal (Kirukaran)	<input type="checkbox"/>	<input type="checkbox"/> _____
9. Kottavikkaal (Devathathan)	<input type="checkbox"/>	<input type="checkbox"/> _____
10. Veengukkaal (Dhananjeyan)	<input type="checkbox"/>	<input type="checkbox"/> _____

#### II. Azhal

	1. Normal	2. Affected
1. Aakkanal (Anala pitham)	<input type="checkbox"/>	<input type="checkbox"/> _____
2. Ollolithhee (Prasaka pitham)	<input type="checkbox"/>	<input type="checkbox"/> _____
3. Vannayeri (Ranjaka pitham)	<input type="checkbox"/>	<input type="checkbox"/> _____
4. Nokku Azhal (Aalosaka pitham)	<input type="checkbox"/>	<input type="checkbox"/> _____
5. Aatralangi (Saathaka pitham)	<input type="checkbox"/>	<input type="checkbox"/> _____

#### III. Iyam

	1. Normal	2. Affected
1. AliIyam (Avalambagam)	<input type="checkbox"/>	<input type="checkbox"/> _____
2. Neerppi Iyam (Kilethagam)	<input type="checkbox"/>	<input type="checkbox"/> _____

- |                              |                          |                          |       |
|------------------------------|--------------------------|--------------------------|-------|
| 3. Suvaikaan Iyam (Pothagam) | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 4. Niraivu Iyam (Tharpagam)  | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 5. Ondri Iyam (Santhigam)    | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

### 34. UDAL THATHUKKAL

- |                         | 1. Normal                | 2. Affected              |       |
|-------------------------|--------------------------|--------------------------|-------|
| 1. Saaram               | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 2. Senneer              | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 3. Oon                  | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 4. Kozhuppu             | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 5. Enbu                 | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 6. Moolai               | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 7. Suronitham/ Sukkilam | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

### 35. MUKKUTRA MIGU GUNAM

- | I. Vali Migu Gunam              | 1. Present               | 2. Absent                |
|---------------------------------|--------------------------|--------------------------|
| 1. Emaciation                   | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Blackish colouration of body | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Desire to take hot food      | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Shivering of body            | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Abdominal distension         | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Insomnia                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Constipation                 | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Weakness                     | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Weakness of sense organs     | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Giddiness                   | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Sluggishness                | <input type="checkbox"/> | <input type="checkbox"/> |



## II. Azhal Migu Gunam

	1. Present	2. Absent
1. Yellowish discolouration of the skin	<input type="checkbox"/>	<input type="checkbox"/>
2. Yellowish discolouration of the eye	<input type="checkbox"/>	<input type="checkbox"/>
3. Yellowish discolouration of urine	<input type="checkbox"/>	<input type="checkbox"/>
4. Yellowish discolouration of faeces	<input type="checkbox"/>	<input type="checkbox"/>
5. Increased appetite	<input type="checkbox"/>	<input type="checkbox"/>
6. Burning sensation in the body	<input type="checkbox"/>	<input type="checkbox"/>
7. Insomnia	<input type="checkbox"/>	<input type="checkbox"/>

## III. Iyam Migu Gunam

	1. Present	2. Absent
1. Excessive salivation	<input type="checkbox"/>	<input type="checkbox"/>
2. Eraippu (dyspnoea)	<input type="checkbox"/>	<input type="checkbox"/>
3. Heaviness of the body	<input type="checkbox"/>	<input type="checkbox"/>
4. Whiteness of the body	<input type="checkbox"/>	<input type="checkbox"/>
5. Chillness of the body	<input type="checkbox"/>	<input type="checkbox"/>
6. Reduced appetite	<input type="checkbox"/>	<input type="checkbox"/>
7. Cough	<input type="checkbox"/>	<input type="checkbox"/>
8. Increased sleep	<input type="checkbox"/>	<input type="checkbox"/>
9. Sluggishness	<input type="checkbox"/>	<input type="checkbox"/>

## 36.NOI UTRA KAALAM

1. Kaarkaalam	<input type="checkbox"/>	2. Koothirkaalam	<input type="checkbox"/>
3. Munpanikaalam	<input type="checkbox"/>	4. Pinpanikaalam	<input type="checkbox"/>
5. Ilavenirkaalam	<input type="checkbox"/>	6. Muthuvenirkaalam	<input type="checkbox"/>

**37.NOI UTRA NILAM**

1.Kurinji ☐ 2.Mullai ☐ 3.Marutham ☐  
 4.Neithal ☐ 5.Palai ☐

**38.** Date of Birth
           
**39.** Time of Birth
**40.** Place of Birth
**41. NATCHATHIRAM**

1.Aswini ☐ 2.Barani ☐ 3.Karthikai ☐  
 4.Rohini ☐ 5.Mirugaseeridam ☐ 6.Thiruvathirai ☐  
 7.Punarpoosam ☐ 8.Poosam ☐ 9.Aayilyam ☐  
 10.Makam ☐ 11.Pooram ☐ 12.Utthiram ☐  
 13.Astham ☐ 14.Chithirai ☐ 15.Swathi ☐  
 16.Visakam ☐ 17.Anusam ☐ 18.Kettai ☐  
 19.Moolam ☐ 20.Pooradam ☐ 21.Utthiradam ☐  
 22.Thiruvonam ☐ 23.Avittam ☐ 24.Sadayam ☐  
 25.Poorattathi ☐ 26.Utthirattathi ☐ 27.Revathi ☐  
 00.Not known ☐

**42. RASI**

1.Mesam ☐ 2.Rishabam ☐ 3.Midhunam ☐  
 4.Kadakam ☐ 5.Simmam ☐ 6.Kanni ☐  
 7.Thulam ☐ 8.Viruchiham ☐ 9.Dhanusu ☐  
 10.Maharam ☐ 11.Kumbam ☐ 12.Meenam ☐  
 00.Not known ☐

## 43. INVESTIGATION

### I. BLOOD

1.TC (Cells/cumm) :

2.DC (%) : 1.P  2.L  3.E   
4.B  5.M

3.Hb (gms%) :

4.E.S.R. (mm/hr) : 1.1/2hr  2.1hr

5.Blood Sugar (R) (mgs%):

### II. URINE

1.Albumin : 0.Nil  1.Trace  2.+   
3.++  4.+++

2.Sugar : 0.Nil  1.Trace  2.+   
3.++  4.+++

3. Deposits

	1. Yes	2. No	
a.Pus cells	<input type="text"/>	<input type="text"/>	_____
b.Epithelial cells	<input type="text"/>	<input type="text"/>	_____
c. RBCs	<input type="text"/>	<input type="text"/>	_____
d.Crystals	<input type="text"/>	<input type="text"/>	_____

**III. MOTION TEST**

1. Yes

2. No

1.Naked eye examination

☐☐

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2.Ova

☐☐

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3.Cyst

☐☐

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4.Occult blood

☐☐

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5.Culture.

☐☐

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**44. CLINICAL SYMPTOMS OF KIRUMI PITHAM**

1.Present

2.Absent

1. Lower abdominal pain

☐☐

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2. Itching all over the body

☐☐

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3. Generalized body pain

☐☐

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4. Constipation

☐☐

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5. Decreased urine output

☐☐

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6. Oedema

☐☐

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7. Worms in stools

☐☐

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8. Offensive odor stools

☐☐

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## **BIBLIOGRAPHY**

- Yugi Vaidhiya Chinthamani – 800
- Noi – Naadal – Part I & II
- Therayar Venba.
- Therayar Kabeyam
- Siddha Maruthuvanga Churukkam.
- TV. Sambasivam pillai Tamil Medical Dictionary
- Thanvanthiri vaithiyam
- Segarasa sekaram
- Maduri Tamil Agarathy
- Fundamentals of Anatomy and physiology-Dutta
- Essentials of Medical Phisiology – K. Sembulingam.
- Text book of medical physiology – Guyton.
- Robbins’s pathologic basis of diseases.
- Davidson’s principles and practice of medicine
- Medical parasitology – Rattan Lal Echhpujani.
- Medical parasitology – CK Jayaram Panikar.
- Social and preventive medicine –C.K. Park
- Text book of parasitology – K.D. Chattergee.
- Fundamentals of Biochemistry-Dr. Ambika Shanmugam.